The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 451.—Vol. XIV.] LONDON: SATURDAY, APRIL 13, 1844. [Price 6d.

Mining Shares in North Wales.

MESSRS. BULLOCK will SELL, BY AUCTION, at the Auction Mart, near the Bank of England, on Wednesday, the 24th of April, at Twelve o'clock, in Three Lots, THREE ONE HUNDREDTH PARTS or SHARES in the GOGINAN MINING COMPANY, in the parish of Llanbadarn, in the county of Cardigan.—Printed particulars may be had of Mr. Taylor, solicitor, Featherstone-buildings; at the Auction Mart, and of Messrs. Bullock, 22, High Holborn.

STAFFORDSHIRE.—VALUABLE ESTATES, COAL MINES, and COLLIERIES.—TO BE SOLD, BY AUCTION, at the CASTLE HOTEL, Newcastle-under-Lyme, on Thursday, the 25th day of April next, at three for Four o'clock in the afternoon, in the following or such other Lots as shall be then agreed upon, all those FREEHOLD ESTATES, situated at and near TALK-O'-THE-HILL, in the county of Stafford, called the "WOODSHUTTS AND HOLLINS ESTATE," the "HARD-ING'S WOOD ESTATE," and the "TALK ESTATE," in the parishes of Audley and Wolstanton, containing, in the whole, about 167 acres, together with the extensive MINES and MINERALS under the same, and also under other estates and waste land therein adjoining, and containing about forty-five acres. On the Woodshutts and Hollins Estate a COLLIERY is now open and at work, with mar-kets both by land and by the canal, for any quantity of coals that can be raised.

These properties, which are divided into exactly eligible farms, with commodious farm-houses and buildings, comprise, besides a capital mansion, or mansion-house, called "White Hall," with spacious offices, outbuildings, &c., a large and valuable water corn-mill, a considerable number of cottages for workmen, large and conve-nient wharfs on the banks of the Grand Trunk Canal, with railroads, powerful winding-engines, with all other machinery and implements for getting and raising coal, weighing machines and offices, carpenters' and blacksmiths' shops, boat docks and canal boats, and every thing appertaining to an extensive colliery in the most complete order.

The average sale for the last five years has been from 400 to 500 tons per week, but it might be increased to double that quantity; and the landed property, lying at the junction of the Macclesfield Canal, with the Trent and Mersey, and intersected nearly a mile by the one, and half a mile by the other, with every conve-nience for extensive docks, warehouses, &c., presents a most eligible situation for the establishment of any branch of trade. The two much celebrated MINES of HARECASTLE, or RANSBURY COALS, lie under a great portion of this property, and have never yet been worked. The line of railway, for which an Act of Parlia-ment was obtained about five years ago, passes through the middle of these estates, and, when executed, must add greatly to their value.

The above properties are situated about five miles from Newcastle-under-Lyme; three from the Staffordshire Potteries; ten from the principal Cheshire salt-works; and six from Congleton; and both the great roads from London to Manchester and Liverpool, through Newcastle-under-Lyme, and through the Staffordshire Potteries, pass through the estates, and the former diverges at a point extremely favourable for the erection of a good inn. In every point of view, therefore, a great and rapid improvement may be reasonably expected in the whole of this property.

For further particulars apply to G. A. M'Dermott, Esq., Chamberlain; or to Messrs. Ward, Sons, and Lowndes, solicitors, Newcastle-under-Lyme.

IRON FOUNDRIES AND FURNACES TO BE LET, all those capital and very extensive PREMISES, situated at TOLL-END, TIP-TON, on the banks of the Birmingham Canal, containing THREE BLAST-FUR-NACES, for hot or cold-blast; AIR FURNACES, CUPOLAS, REFINERY, BORING MILL, and the most expensive and complete FOUNDRY ESTABLISHMENT in the county of Stafford, in which contracts for iron castings of any description or magnitude may be executed, having within its boundary suitable residences for a manager and clerks.—Application to be made to Mr. Lawrence, Birmingham Canal Company's offices, Newhall-street, Birmingham.

CARDIGANSHIRE.—TO BE LET, with possession on the 8th day of August, 1844, all those celebrated rich and productive MINES OF LEAD ORE, known by the names of—

THE CWMYSTWYTH,	BWLCHGWYNNE, and
VOTYMYDIN,	LLWYDYR-Y-LLWYNOG WORKS,

and all other mines on the estates of William Edward Powell, Esq., M.P., situate in the county of Cardigan.—The Cwmystwyth Mines are now worked with great success by the present lessee, and are within sixteen miles of the seaport town of Aberystwyth. The other works within twelve miles.

Further particulars, and every information, may be had on application to Mr. John Hughes, surveyor and land agent, Aberystwyth.

VALUABLE LEAD MINES IN BRECONSHIRE.—TO BE LET, ON LEASE, at the usual royalties of the district, an extensive tract of RICH MINERAL GROUND, in the parish of Llanafanvy, Abergwesyn, in the county of Brecon. The property is known by the name of NANT-Y-BRAIN, in the immediate neighbourhood of the celebrated Nanty-mwyn, Treburg, and Rhon-dyr Mwyn Lead Mines.

Several tons of ore have been raised by simply trenching the ground to the depth of a few feet only. By an assay, it produces 75 per cent. of lead to the ton of ore, with some silver, which, as yet, has not been accurately determined, but it is be-lieved it yields 60 oz. to the ton of lead. A very considerable water-power may be find on the premises, and the ore may be conveyed to the smelting works to the same manner as it is conveyed from the Rhondyr Mwyn and the adjacent works.

For terms and other particulars apply to Lloyd, Mathew Francis, Llanbedr Cledogau Mines, Lampeter, Cardiganshire; or to the proprietor, P. Vaughan, Esq., Brecon.

SHILDON LODGE COLLIERY.—TO BE LET, and may be entered upon at May-day next, all that current-going COLLIERY, situated near the village of Shildon, in the county of Durham, known as the SHILDON LODGE COLLIERY. There are two seams within the capaby—the top seam, now in working, and well known as a valuable coal for steam purposes; and the main coal seam, which is reported, being at a moderate depth under the top seam; the character and quality of the latter seam is sufficiently established by the neighbour-ing collieries of Copy Close and Shildon (which join the property throughout its entire length, east and west), combining the Seymour's Wall's End and Anderson's Wall's End at the London market. Machinery of ample power to command any coal that has been erected upon the pits, and access is given to the Shildon and Dar-lington Railway, for a more acknowledgement, by a private line of railway already formed. The rentals are exceedingly moderate, and the term of years to be agreed upon, sufficient to exhaust the capaby—forming, on the whole, one of the most de-sirable investments in the coal trade.

For reference apply to Richard Brewer, Esq., Bishop Auckland; Mr. Armstrong, of Wingate Grange Colliery; or the present lessee, upon the premises.

Shildon, April 9.

A FREESTONE QUARRY TO BE LET, and may be entered upon at May-day next, all that current going QUARRY, situated at SHIL-DON, in the county of Durham, presenting an unbroken face of limestone, nearly 100 feet in thickness, uniform in quality, of a compact and close grain, eminently adapted for the erection of large public works, docks, harbours, piers, &c. The whole is known to extend over between 100 and 200 acres of the estate; a steam-engine is erected upon the premises, which will command the entire depth of the quarry, and plenty for feeders of water, which are very liberal. A private railway connects the quarries with the Darlington public line, by which stone may be given delivery to the direction and Darlington public line, by which stone may be forwarded for shipment at Stockton, or by the Great North of England and other lines, into the interior. A lease for any term of years may be accepted to commen-cement of a moderate rental. There is at present a considerable local demand for stone, and the new railways in progress forming from the many collieries in the vicinity, and the new railways in progress forming one of the most desirable investments the county can afford.

Application to be made to Mr. W. Armstrong, Wingate Grange Colliery, Castle Eden, near Hartlepool; or to Mr. John Robson, Bridgewater, Darlington.

Specimens of the stone may be seen at Mr. Lister's office, 21, Regent-street.

PATENT OXY-HYDROGEN FURNACES FOR STEAM-BOILERS, LOCOMOTIVE-ENGINES, BRASS and COPPER, and other purposes, CONSUMING the two important heretofore GREAT NUISANCES OF FIRE, AND TOTAL ABSENCE OF SMOKE.

SWAYNE AND BOVILL,

MILLWALL, POPLAR, AND 15, ARCHIBOLD-LANE, CITY.

Engineers and Patent Wrought-iron Railway and Cast Wheel Manufacturers, have been appointed AGENTS for EITHER'S PATENT OXY-HYDROGEN FUR-NACE, for the use of which, from twelve months' experience with steam-vessels and other furnaces fitted on this principle, they can confidently state a SAVING OF THIRTY PER CENT. is effected over any of the best constructed furnaces hitherto introduced. This furnace is designed for burning anthracite, or stone coal, which has long been considered by engineers and scientific men to be by far the most powerful fuel, combining upwards of 95 per cent. of pure carbon; but, until the introduction of this furnace, the efficient application had been a matter of much dif-ficulty, as to prevent its escaping. These difficulties have been entirely overcome by a simple disarrangement of the grate and fire bars, by which means is passed through the fire, promoting a powerful and continued flame by the actions of oxygen, hy-drogen, and combined carbon, of a high temperature, the elements which produce, with the hydrogen, the most intense heat known; from the effects of which are fully developed in diffusion through the flues of the boiler. This arrangement also pre-vents the grate-bars, preserves clinkering, and leaving little or no ash.

For further particulars apply as above, where the cost of furnaces, &c., will be given, and also information regarding settlements, which may be had in London at the price of any good steam coal.

TO RAILWAY COMPANIES AND CONTRACTORS, COAL OWNERS AND IRONMASTERS, &c.—TO LET or SELL by private contract, and possession of certain premises, with every facility for IMMEDIATELY OR NEAR DELIVERY OF VARIOUS QUANTITIES, prepared for the EXPORT TRADE AND HOME USE, from the highest seam now in work, by the "Ardwyning" navi-gation. The largest tonnage can be given of quality, prices very moderate.

Offers may be addressed, samples and particulars obtained, at 102, Fenchurch-street, London.

ASSAYING.—IMPORTANT TO THE PROPRIETORS AND SHAREHOLDERS OF MINES.—ASSAYS of LEAD, COPPER, IRON, TIN, MANGANESE, and all other ores, are conducted by Mr. MITCHELL, analy-tical chemist (late of the Royal Polytechnic Institution), No. 9 A, Hawley road, Kentish Town.—N.B. Gentlemen instructed in assaying and general analysis.

CWM AMMON ANTHRACITE COAL, CULM, AND IRON COMPANY.

Capital £40,000, in 800 shares of £50 each.

The objects of this company are to combine the MANUFACTURE of ANTHRA-CITE PIG-IRON with the WORKING of the COLLIERY now in operation, for which purpose an increase of capital is requisite. Leases of the minerals for long terms have been secured, and every advantage of transit down the line of the Llan-elly Railway presents itself. The shares not already allotted will be appropriated to applicants approved by the provisional committee.

Prospectuses may be obtained on application to Messrs. Palmer, Hope, and Co., 33, Throgmorton-street; or to Mr. John Bigg, Llanelly Railway and Dock Com-pany's offices, 9, Old Jewry Chambers, London.

ASTURIAN MINING COMPANY,

Established in accordance with the Commercial Code of Spain.

Capital £200,000, in 13,000 shares, of £20 each; Spanish Weak, 200; Francs, 500. Deposit £2 per share.

BOARD OF DIRECTORS.

GIDEON COLQUHOUN, Esq., Chairman.
Sir WILLIAM YOUNG, Bart., Deputy-Chairman.

Benjamin Harding, Esq.	Julius Ansten, Esq.
Colonel Edward Shepherd	Lieut.-Colonel Fitch.
John Knill, Esq.	Henry Soltau, Esq.

(With power to add to their number.)

CORRESPONDING DIRECTORS.

Marquis de Gros de Perignon, M.C.D., President of the Pyrenean Canal Co.	Count Ernest de Cassenas, Paris
	Baron Morat, Oviedo

The directors beg respectfully to inform the public, that the allotment of the shares was concluded this day. They take this opportunity of expressing their re-gret to the numerous applicants to whom it has been found impossible to allot shares, that their number precludes the possibility of each letter being separately answered.

JOHN CHARRETIE, Secretary.

9, Austinfriars, April 3.

THE GOVERNOR AND COMPANY OF COPPER MINERS IN ENGLAND.

Incorporated by Royal Charter A.D. 1691.

Capital £[illegible], in 10,000 shares, of £100 each.

OLD BROAD-STREET AND CASTLE BAYNARD WHARF.

Governor—AREL LEWES GOWER, Esq.
Deputy-Governor—JAMES ALSTON, Esq.

ASSISTANTS.

Henry John Rathbone, Esq.	Francis Mowatt, Esq.
William Gladstone, Esq.	John Nix, Esq.
John Pierce Kennard, Esq.	Archibald Paull, Esq.
John Lawrie, Esq.	John Henry Petty, Esq.
William Little, Esq.	Alfred Ricketts, Esq.
Hart Logan, Esq.	William Scarth Moorsom, Esq.
John Mac Donnell, Esq.	Louis Vignier, Esq.
Frederick Ricketts, Esq.	Gregory Grote Walters, Esq.

The Court of Assistants of the Governor and Company of Copper Miners in Eng-land hereby give notice, that the HALF-YEARLY DIVIDEND, declared on the 6th inst., at the rate of 5 per cent. per annum, free of deduction for income tax, on the paid up capital stock of the company, will be PAYABLE at their house, Old Broad-street, on and after Monday, the 15th inst.

By order of the court of assistants,

W. INGLIS, Sec.

CONSOLIDATED COPPER MINES AND COBRE ASSO-CIATION.—Notice is hereby given, that a DIVIDEND of ONE POUND per share will be PAID to the holders of certificates in this company at the office of the association, 26, Austinfriars, on and after the 15th of April next, between Eleven and Three o'clock.—The proprietors are requested to leave their certificates at the office for examination three clear days before the day of payment.

By order of the court of directors.

WM. LUKIS, Secretary.

26, Austinfriars, March 29.

THE PATENT SAFETY FUSE, FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the safest, cheapest, and most expeditious mode of effecting this very hazardous operation. From many testimonies to its excellence with which the Manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor Esq., F.S.S., &c. &c.—

"I am very glad to hear that my recommendations have been of any service to you. They have been given from a thorough conviction of the great usefulness of the Safety Fuse; and I am quite willing that you should employ my name as evi-dence of this."

Manufactured and sold by the Patentees, RICHARDS, SMITH, and DAVEY, Camborne, Cornwall.

MOREWOOD'S PATENT GALVANISED TIN PLATES-WIRE WORK, HOOPING, &c.

J. W. KINCAID, AGENT for the ABOVE, solicits the attention of BUILDERS, ARCHITECTS, SURVEYORS, and the PUBLIC GENERALLY, to the very many ADVANTAGES which these plates possess over zinc, lead, or other metallic cover-ings, having the strength and lightness of iron, without its liability to rust or cor-rosion; they are scarcely at all affected by sudden changes of temperature, which cause so much contraction and expansion in both zinc and lead; nor will they col-lapse, or melt, as the above metals do, in case of fire; neither are they, like zinc, liable to condensation; they are, therefore, admirably adapted for ROOFING, GUT-TERS, SPOUTING, CHIMNEY-TOPS, &c., in any climate, but more particularly those which are subject to the extremes of heat and cold. The material being strong, and where there is great variation in the temperature. The material being strong, and of the same time exceedingly light, and the sheets being fastened together, it is, there-strengthens the building, instead of requiring any support themselves; it is, there-fore, scarcely necessary to add, that the timbering required in many of the very slightest description.

With regard to the comparative expense of this and other metallic coverings, it will be found that the same strength does and cost more than two-thirds that of zinc, which is the cheapest metallic roofing, as requires does cost, at present in use.

The above are manufactured in plates of various sizes, up to 6 ft. by 2 ft. 6 in.

Further particulars may be obtained, and specimens of the patterned tin plates, and other articles, such as chimney tops, guttering, piping, baths, &c., seen, on application to J. W. Kincaid, Agent, 79, Skinner-lane, Londonet-street, where any information may be obtained regarding the process, which is equally applicable to roofing with lead or the alloys of the said lead.

SMOKE NUISANCE—ECONOMY OF FUEL WITHOUT THE NUISANCE from SMOKE, by C. W. WILLIAMS'S ARGAND FURNACE.—The principle of this furnace consists in the mode in which the air is introduced to the gaseous matter evolved from coal, whereby a more perfect combustion of the combustible is effected, the present being conducted on true chemical principles as explained by Mr. Williams, in his Treatise on the Combustion of Coal. A furnace constructed on this principle may, by permission, be fairly seen in action at the Water-works, Soho-street, and Manchester Railway station, Edge-hill, Liverpool. For further information, apply to Bevan and Co., agents, No. 37, King William-street, City.

HER MAJESTY'S DOCKYARD, PORTSMOUTH.

SIR W. BURNETT'S PATENT having undergone NINE YEARS' TRIAL IN ALL CLIMATES, is now in daily extensive operation in the above national establishments, as well as by many public companies and private individuals.

This PROCESS preserves TIMBER from DRY-ROT, and, when desired, renders it incombustible.

It is cheap, innocuous, and easy of application.

It may be used in ordinary wooden tanks, and does not, therefore, require hydro-static construction, except for the sake of expedition.

It renders the ground-wood to a very small trace, and renders the commercial value of the timber equal to a fully sound trace, and renders the commercial

Its domestic district appear to the hard timbers.

CANVAS, CORDAGE, COTTONS, and WOOLLENS are not only preserved from ROT, MILDEW, and the attacks of MOTHS, but are rendered to colour, and employed even stronger than before.

Numerous specimens and testimonials may be seen, and every information upon its objects and application will be given, at the manufactory,

41, KING WILLIAM-STREET, LONDON-BRIDGE.

OFFICE FOR PATENTS OF INVENTIONS AND REGIS-TRATION OF DESIGNS, No. 14, LINCOLN'S-INN FIELDS, LONDON.—INVENTIONS and CAPITALISTS are brought together, and SECURING and DISPOSING of BRITISH and FOREIGN PATENTS, preparation of SPECIFICATIONS, and search and REGISTRATION of DESIGNS, is transacted with care, economy, and expedition.

REGISTRATION OF DESIGNS.—Under the new Act, 5 and 6 Vic., cap. 65, ARTICLES OF UTILITY, whether in metal or other substances, may be protected for three kingdoms for three years, also every novelty, Ornamental Designs may also be registered under the Act 2 and 3 Vic. c. 17.

A prospectus, with full particulars of the fees required to be paid, and the re-sults of practice, with explanations, particularly as to the manner in which the Designs Acts, may be had gratis, upon application, personally, or by letter, to Mr. ALEXANDER MACLEAN, 14, Lincoln's-Inn-fields, London.

TO GASOMETER MAKERS, BOILER MAKERS, AND IRON FOUNDERS.—WANTED, SPECIFICATIONS and TENDERS for a GASHOLDER, to be erected on the Works of the Borough of Tynemouth Gas Company; the diameter to be 52 feet, and the depth to be 20 feet—to be constructed in such manner as to admit hereafter of a lower and outer part of equal depth, and 51ft. 6 in. diameter, on the telescopic principle; the gasholder to be supported from, and guided by, cast iron columns, at three equi-distant points, and secured to the ebonework of the tank in the usual manner; the contractor to find all ironwork, pulley-wheels, and other requisite apparatus, except chains and hammer-weights, as well as all scaffolding and tools—and to guarantee the stability of the work for twelve months after its completion.—Tenders and particulars will be received, ad-dressed to Mr. W. H. Atkinson, 60, Bedford street, North Shields, until April 20.

North Shields, April 4.

PATENT IRON ROOFING, the CHEAPEST & STRONGEST EVER MADE, which will be put on any BUILDING, and COVERED with SLATES, at as SMALL A COST as a TURRET ROOF can be furnished and slated. —Specimens may be seen at the Oak Farm Works, near Dudley, and particulars and prices obtained from them upon application, or from Messrs. Bailey and Pegg's Ironstore, London.—Also PATENT ROLLED FIELD GATES, in which all the joints are welded together, and MADE of WROUGHT IRON, equally strong both ways, may be had, in numbers of not less than ten (for cash), from 10s. upwards.—These may be had upon application to the Oak Farm Works, or through Messrs. Cottam and Hollins, ironfounders, &c., Winsley-street, Oxford-street, and Corn-wall-road, London, where specimens may be seen.

*** Names of dealers in provincial towns will be advertised hereafter.

ANDREW SMITH'S PATENT GALVANISED WIRE ROPE (WARRANTED NOT TO OXIDISE) FOR MINING, RAILWAY, AND SHIPPING PURPOSES.—The Royal yacht *VICTORIA AND ALBERT*, *PENELOPE*, *VIRAGO*, *HERMES*, and several other ships in the Royal Navy, on the Hovemants' Service, have been FITTED WITH ANDREW SMITH'S PATENT WIRE ROPE; 8 in. about half the size and weight of hempen rope and one-third cheaper.—For particulars apply to Andrew Smith, 7, White Lion-court, Cornhill, 60, Princes-street, Leicester-square; or at the works, Millwall, Poplar, London.

DUNDEE AND PERTH RAILWAY, TO JOIN THE DUNDEE AND ARBROATH RAILWAY AT THE HARBOUR OF DUNDEE.

Capital £220,000, in 10,000 shares of £20 each.—Deposit £2 10s. per share.

PROVISIONAL COMMITTEE.

The Right Hon. Lord KINNAIRD, Chairman.

Sir PATRICK MURRAY THRIEPLAND, of Fingask, Bart., Deputy-Chairman.	
The Most Noble the Marquis of Breadalbane	Thos. Bladin, Esq., Lord Provost of the city of Aberdeen
The Right Hon. Lord Gray	Geo. Paton, Esq., Provost of Montrose
The Right Hon. Lord F. Gordon Hallyburton, M.P.	J. Gibson, Esq., Provost of Arbroath
The Right Hon. Fox Maule, M.P.	Wm. Pulteney Lyoncy Cavendish, Esq., of Ayrde and Burnside, Chairman of the Arbroath and Forfar Railway Co.
George Dempster, Esq., M.P.	
Sir John Ogilvy, of Inverquharity, Bart.	
Sir John Stewart Richardson, of Pitfour, Bart.	Wm. Carr, Esq., and Geo. Pyle, Esq., Two of the directors, and as representing the Dundee and Arbroath Railway Company
Sir William Scott, of Ancrum, Bart.	
Admiral Sir A. Drummond, of Megginch	
Captain Allan, R.N., of Errol	R. Anderson, Esq., merchant, Dundee
Lawrence Craigie, Esq., of Glendoick	A. Burns, Esq., banker, Perth
Charles Hunter, Esq., of Glenmarve	Geo. Canning, Esq., merchant, Arbroath
Robert Crystal, Esq., of Inchyra	T. Drummond, Esq., Craigie, Dundee
William Henderson, Esq., of Mylnefield	D. L. Jolly, Esq., banker, Perth
Colonel Bolgaires, of Bolgavies	D. Lowson, Esq., Springbank, Arbroath
John Crichton, Esq., of Grange of Conan	J. Leighton, Esq., banker, Montrose
John Miller, Esq., of Ballindalloch	D. Martin, Esq., merchant, Dundee
A. Lawson, Esq., Provost of Dundee	T. Webb, Esq., merchant, Dundee
G. M. Gray, Esq., one of the magistrates of Dundee	W. Peddie, Esq., of Pitcairns Bank
William Thoms, Esq., Dean of Guild, Dundee	D. H. Thoms, Esq., banker, Dundee
	J. Westland, Esq., banker, Dundee
	James Wigham, Esq., Mylnefield

ENGINEER—John Miller, Esq., C.E., Edinburgh.

SOLICITORS—Messrs. G. and T. W. Webster, 1, Old Palace-yard, London.

At one end of the territories of this railway is the harbour of Dundee, embracing in with the Dundee and Arbroath Railway—on at the other end is terminates to the city of Perth. The population of Dundee is about 60,000, and that of Perth 21,000, while the intermediate district is fertile and populous in a great degree.

The length of the line is about twenty miles; the gradients are the best possible, the country being almost perfectly level; and the cost, as estimated by Mr. Miller, will not exceed £220,000.

REVENUE.

A table of the traffic between the towns of Dundee and Perth has been made up with great care, and it may be safely relied on as in no way exaggerating the traffic of the locality.

Passengers—120,000 passengers per annum, at the average of 1s. 2d. £[illegible] 0 0

Goods, general merchandise, farm produce, manure, stones, coals, &c. 7,875 0 0

Deduct expenses of working and management, 50 per cent., or say .. [illegible] 0 0

Equal to a return of upwards of 7½ per cent. upon the proposed capital.

ADDITIONAL REVENUE.

This line will join the Scottish Central Railway at Perth, and form a continuous line from Dundee to Glasgow. A very important branch of traffic indeed there will be between the two towns of Dundee and Glasgow for shipment at the ports of Liverpool and London, there is also a large traffic in other goods to and from Glasgow, all of which, it is confidently expected, will be wholly diverted from the present circuitous and uncertain route by sea to the railway. From accounts re-ceived it is ascertained to exceed 80,000 tons, which, at 10s. 6d. per ton, is equal to £[illegible],000 per annum, the proportion of which falling to this company would be £[illegible],000 per annum, or upwards of an additional 1½ per cent. upon the capital—making in all upwards of 9 per cent., exclusive of the coal interest to the passenger traffic between these large towns. The line will also be connected with the Edinburgh and Northern Railway through Fife, and the Aberdeen Boat Canal Railway, by al-ready which the traffic must be greatly augmented.

Parties who have paid £2 10s. upwards per share shall receive interest at the rate of 5 per cent., to half yearly payments, until the works be completed.

Applications for shares may be made to the form annexed to the solicitors in Lon-don; or to Messrs. John Robertson and Co., Royal Exchange, Edinburgh; J. C. Dobie, 30, Virginal-street, Glasgow; Charles Cunningham, Exchange-square, Glasgow; Messrs. Bonsor and Bennett, Leeds; J. B. Irving, Liverpool; Messrs. Sanderson and Everett, Leeds; J. B. Irving, Liverpool; Joseph Smith, Spanish-street, Manchester; Edward Wilson, Temple-street, Birmingham; Joseph C. Brooke, Halifax; D. S. Brown, 12 John Bagnold, jun., Dundee, Glasgow; Gray and Jamieson, writers, Perth, who will furnish detailed prospectuses, &c.

DUNDEE and ARBROATH, Dundee, Solicitation.

Dundee, April, 1844.

FORM OF APPLICATION FOR SHARES.

Date.

To the Provisional Committee of the Dundee and Perth Railway.

Gentlemen,—I am desirous of becoming a subscriber for shares in this undertaking, of £10 per share. The deposit upon which, to any one number of shares that may be allotted to me, I agree to pay, and I also undertake to sign the Parlia-mentary contract, and any other necessary deeds, when required so to do.

I am, Gentlemen, your very obedient servant,

Name .....
Address .....

TO ENGINEERS, RAILWAY CONTRACTORS, MINING AGENTS, IRONMASTERS, and OTHERS ACQUIRING FIRE-BRANDS for MACHINERY and ASHES of every description.—PATENT PROTECTED OIL PREVENTED ANTI-FRICTION GARAGE is offered upon the distinctive and points of every kind whose combined interest is kept up—attended to by the most careful, con-scientious, and true preparation of the kind ever offered to the public.

Address—to introduce such practical men as the patentees, and Patentees-able charge of the great experiment—Samples forwarded on receipt of a line at the counting-house, Queen-street, Wellington-street, Blackfriars-road.

TO RAILWAY ENGINEERS.—The FIRST NUMBER of the "RAILWAY CHRONICLE" will appear on SATURDAY NEXT, the 20th of April. A detailed prospectus will be sent free, by post, to all who desire their address to the office, 14, Wellington-street North, Strand, London.

PROCEEDINGS OF PUBLIC COMPANIES.

THE COPPER MINERS OF ENGLAND.

CONDUCTED BY SMALL CHARTER.

The half-yearly general meeting of the Governor and Company of the Copper Miners of England was held at their office, in Broad-street, on Saturday, the 6th instant, when there was a full attendance of the proprietors.—Abel Lower Gower, Esq. (the governor), took the chair, and opened the business of the meeting, by calling on Mr. Inglis (the secretary) to read the minutes of the last meeting, after which they were confirmed.—The Governor then rose, and spoke as follows:—Gentlemen, this is an annual court, duly convened by notice in the London Gazette, for the election of the governor, deputy-governor, and assistants for the year ensuing, and for this office we beg to recommend to you the gentlemen named in the accompanying list. The business of the company has proceeded in a very satisfactory manner during the half year that has intervened since the last general meeting. The coal trade, on which the company's business is in a great degree based, has been, as is, I believe, generally known, in a state of great depression for some time, owing principally to the extreme length to which competition has been carried, and, of course, both the company's sales and returns have been much limited in consequence. I am happy to be able to say that there is now a prospect of that excessive competition being brought to a close, and of the trade being restored to its former health and condition. Various improvements in the mode of taking and raising coal are in the course of being completed with, and, by reducing the cost price, will add further to the profits upon the sale of this article. Of the tin plate trade and manufacture, I have the satisfaction of speaking most favourably. Although the price was unusually low during all the last year, yet as this portion of the company's business realised a very considerable return, and the use of the blackband enabling the company to produce iron from which the plates are made, at much less cost than heretofore, and an advance in the price having taken place lately, it has been determined on to extend the work of the company to 1000 boxes per week; of a favourable result of which, upon the company's revenues, I entertain no doubt whatever. On the subject of the copper trade, I have only to remark that a gradual improvement has taken place in this great branch of the company's business, from the period of our last meeting up to the present time, and that I entertain the expectation that it will be henceforward of a more remunerative character than in the past year. As connected with the subject, I may mention that the court, finding from actual experience, that we can manufacture copper at Cwm Avon on more advantageous terms than at Wimbledon, and to any extent, have determined on discontinuing the use of the mills and machinery at that place, and of disposing of the property altogether. With reference to the manufacture of iron from that invaluable mineral the blackband, lately found in such large quantities, and of the richest kind, on the company's property, I have the pleasure to acquaint you that actual experiments have fully confirmed the expectations we had formed, of being able to produce iron from this substance at a very much diminished cost, and that we accordingly propose to avail ourselves of this advantage, and that of the great rise that has taken place in the value of iron, to increase very materially our make of the commodity, and thereby add to the returns of the company. The outlay consequent on this step will be but proportionately small. The company's operations during the past year, in Wales, have been as follows:—At Swansea we have raised 42,150 tons of coal, of which we have consumed 19,822 tons, and shipped and sold the remainder, and the works there have smelted and refined 1613 tons of copper. At Cwm Avon we have raised 64,939 tons of coals from the old collieries; 30,819 ditto from Oakwood; 19,696 ditto from Bryn—134,556 tons altogether, of which we have consumed 81,867 tons, and sold 52,689 tons. These works have made 36,412 boxes of tin plate, and smelted and refined 2389 tons of copper, and have rolled and hammered 264 tons, while the Wimbledon mill has manufactured 709 tons of copper. I have further, gentlemen, the extreme satisfaction of announcing to you, that the one thing hitherto so much desired, and so essential to the company's successful progress—viz., the disposal of its remaining shares, has been effected, and that the company now, besides occupying a much stronger and safer position here, for the future, the command of the requisite amount of capital to enable it to turn to full account the many advantages it possesses. The court of assistants, in the due consideration of the state of the company's affairs, have resolved on declaring a dividend for the half year, at the rate of 3 per cent. per annum on the paid-up capital stock of the company, such dividend to be payable on and after the 15th inst. I have also to announce to you, that the court of assistants have modified the by-laws relating to the qualification of the members of the court, having increased it in the case of the governor and deputy-governor to 100 shares, and in those of the assistants to fifty shares.

A short discussion then followed on the expediency of disposing of the mills at Wimbledon, or otherwise, which ended in the views of the court, as set forth in the speech of the governor, being adopted.—Mr. Mason then rose, and proposed that the speech they had just heard be received, printed, and circulated amongst the proprietors.—Mr. J. Goodhart having seconded the resolution, the Governor put it to the meeting, when it was unanimously adopted. He would now inform the meeting, their next business was to elect the governor, deputy-governor, and court of assistants to serve for the ensuing year.—Messrs. William Cotton, Mason, and J. H. Goodhart, were nominated scrutineers, who declared the following gentlemen to have been re-elected without an opposing vote:—

Abel Lower Gower, Esq., Governor.
Francis Alston, Esq., Deputy-Governor.

ASSISTANTS.

Henry John Rotherham, Esq.	Francis Mowatt, Esq.
William Gladstone, Esq.	John Pix, Esq.
John Pascoe Grenfell, Esq.	Archibald Paull, Esq.
John Lewis, Esq.	John Henry Petit, Esq.
William Lidbitt, Esq.	Alfred Rimmell, Esq.
Abel Logan, Esq.	Frederick Robarts, Esq.
John M'Dermott, Esq.	Lewis Vignes, Esq.
William Hamlin Thornton, Esq.	Gregory Isaac Walters, Esq.

Mr. J. H. Goodhart was so highly gratified with the statement of the governor upon the prospects of the company, as well as the flattering account of their proceedings during the past year, that he could not refrain the meeting to express without first moving a vote of thanks to the governor, deputy-governor, and court of assistants, for the able manner in which they had conducted the affairs of the company.—Several proprietors rose to second it, when it was put and carried with acclamation.—The Governor, in returning thanks for his colleagues and himself, for the mark of confidence reposed in them by the proprietors, said he hoped shortly to have the pleasure of meeting the expectations of some of the proprietors, by announcing to them they were able to pay a larger dividend than 3 per cent.—A vote of thanks was then passed to the Chairman, who briefly returned thanks, and the court broke up.

HOLMBUSH MINING COMPANY.

The annual general meeting of shareholders in this company was held at the office, Old Broad-street, London, Thomas Hagart, Esq., in the chair.—The Secretary read the circular convening the meeting.—The minutes of the general meeting of March 30, 1843, were read and approved.—The following report of the directors, together with the statement of the accounts, as examined and signed by the auditors, was read.—The report of Mr. Hitchens (the manager), on the present state and prospects of the mine, was read.—From the accounts above mentioned, it appeared, that 2389 tons of ore had been sold during the year, realising £9,4196. 3s. 6d.; loss down, £2274. 19s. 11d.—leaving £7,1511. 4s. 7d.; the cost for the year had been £5,1066. 13. 10d., showing a profit on the twelve months' working of £1911. 10s. 7d.; the reserve fund amounting to £4116. 1s. (Cassells.)

[illegible]

[illegible] to be allowed, [illegible] to be [illegible] to the [illegible] to [illegible] to [illegible] to

of which was, that out of a packet of letters he gave Mr. Lane (one of her officers), one he directed to Sir John Barrow was never delivered.

Mr. Barlow (a director) hoped the hon. proprietor did not presume that the directors had kept back a letter. If there were any charge, it should have been brought against Mr. Lane, and not against the directors.

Mr. Ridgway: There is no insinuation of that kind.

Mr. Barlow: It is stated as a very important charge by a proprietor; and this charge, I presume, must rest on some one of the directors. (No, no.) All I can say, then, that in such a case, that charge is a gross calumny upon the directors (hear, hear)—for they would not detain any letter from its original destination.

The Chairman said, all the letters delivered to Mr. Lane went to the office, and would be given to the secretary, Capt. Chappell (a worthy and honourable man), who assured him (the chairman) that he was ready to take his oath that in the parcel of letters there was not one addressed to Sir John Barrow. (Hear, hear.) He regretted that such complaints should be made by proprietors. From the public they had nothing but testimonials of the conduct and abilities of their officers, and approbation of their general arrangements for the service; whilst in their own body were parties ready to make any unfounded statements likely to damage the undertaking; this he much regretted. (Hear, hear.)

A Proprietor said he hoped nothing said in that room would be at all detrimental to the company. He thought it was only for the purpose of lowering the value of the shares, and that those individuals who made such charges, were looking out to profit by the low prices. (Hear and laughter.)

The report was then, on the motion of the Chairman, seconded by Capt. Wilbe, received unanimously, and ordered to be entered on the minutes.

The Chairman said that two gentlemen now went out by rotation (Mr. Cotesworth and Mr. George Hibbert), who offered themselves for re-election.—They were re-elected unanimously.—The Chairman: By the resignation of Captain Shepherd, who is now deputy-chairman of the East India House, and not able to attend to this concern, the vacant office of director is proposed to be filled by Mr. Thomas Masterman, who offers himself, having filled the office of auditor since the commencement.—The election of Mr. Masterman was agreed to unanimously, and Mr. Charles Shaw was elected an auditor, in the room of Mr. Thomas Masterman, now a director.—Mr. Mountague trusted that the next meeting would be at six, and not at twelve, months.—The Chairman: Yes, but then only the temporary accounts can be prepared.

Mr. Poynder said he hoped they would not allow the meeting to separate without thanking the directors. The accounts laid before them that day were of a very gratifying nature, compared with what were given at a former meeting. He was perfectly confident that, by means of the abilities, the talent, and the integrity, of the chairman and directors, in presiding over their affairs, they would soon see a glorious result to their future operations. He would, therefore, move—"That the thanks of the meeting be given to the chairman, deputy-chairman, and court of directors." (Applause.)—The motion having been seconded by Capt. Lambert, was carried unanimously, and the meeting then separated.

LONDON AND BIRMINGHAM RAILWAY COMPANY.

A special general meeting of the proprietors was held at the Euston Station, on Friday, the 12th instant, to consider the draft of the bill now before Parliament, for constructing a railway from Chester to Holyhead, and authorising this company to subscribe 1,000,000*l.* towards the same.—George Carr Glyn, Esq., in the chair.

The Chairman, in his opening remarks, observed, that since the last meeting, they had received an assurance that it was the intention of Government to form a harbour at Holyhead, and that the formation of a company to form a line from Dublin to Cashel, and thus carry the Holyhead line through Ireland, was a feature of much importance. He stated that the bill had gone through the second reading without the slightest opposition, and there was every appearance that it would go through committee in the same satisfactory manner.—The clauses were then read, and the bill was unanimously agreed to.

Another special meeting was immediately afterwards held, for considering the bill for the construction of the proposed line from Lancaster to Carlisle, and to authorise this company to subscribe 100,000*l.* towards the same.—The Chairman having stated that it was the intention of the directors to remain perfectly neutral as to the competing Scotch lines now before the public, the clauses of the bill which affected this company were read, and unanimously agreed to.—Mr. Frase observed, he hoped the directors would take advantage of the present state of the money market, to raise the necessary supplies, and the Chairman assured the meeting they were quite alive to the circumstance, and had availed themselves of them, and the credit of the company for the purpose.—A vote of thanks was then passed to the chairman, and the meeting separated.

Anthracite.—This is a remarkable species of coal, hitherto but little known in this country as fuel for general purposes. It has been long used in the south of England for drying malt and hops, and in Wales, where the great deposit lies, chiefly in the counties of Pembroke, Carmarthen, and Glamorgan, it is in general use, and preferred by the inhabitants, who have become habituated to its peculiarities and understand the management of it, on account of the cleanliness and freedom from dust and smoke. It is the most abundant coal in America, where it is used as fuel in steam boats, locomotive engines, for general manufacturing purposes, and household fires. The chief peculiarity of anthracite consists in the absence of bitumen, being nearly pure carbon; in a very compact solid state, containing no gas, tar, or light volatile particles, the production of smoke or soot from its combustion is quite an impossibility. Some fine specimens of anthracite have been found to contain 96 to 97 per cent. of carbon, and since the diamond is proved to be pure carbon, it becomes a curious subject for inquiry how the extraordinary difference in the appearance of the two bodies arises. A diamond may be regarded as one entire crystallised atom; a piece of anthracite of the same size as made up of an immense number of minute atoms held together by mechanical means; the former may be represented by a piece of colourless glass, the latter as a similar piece of glass pounded down to fine dust, and bound together by cement. There is another curious inquiry connected with this subject—what has caused the difference between anthracite and bituminous coal? more by close attention to the veins or seams of coal in South Wales, where our property is in Glamorganshire, the veins or seams, whichever the western side of the county are found to be pure anthracite, become bituminous, to a certain extent, on the eastern or north eastern side—that is, about Merthyr and Dowlais, while further eastward, in Monmouthshire, they become highly bituminous. Whatever may have been the origin of coal, it seems as if during some subsidence of the strata, the anthracite portion had been subjected to greater heat, or less other pressure than the bituminous portion, so as either to volatilise, or press out, the gaseous or volatile parts, or probably both together were in operation at the same time, leaving that which was originally the same, two distinctly marked different species at the present day. Various attempts have, from time to time, been made to render anthracite available as fuel for steam engines, for which it often proves highly valuable, more particularly for marine purposes, from its great strength, durability, the absence of smoke, its power of resisting the destroying effects of the atmosphere, or other influences, requiring no spontaneous combustion apparatus, and the whole space occupied by ordinary steaming cargo available; but hitherto all such attempts have, from some cause or other, failed. A plan is now, however, coming forward, which bids fair to realise this long desired object. It has been patented by Mr. Gamon, who has published a pamphlet on the subject, Simpson and Bethell, the patentees of which are most favourably referred to in their advertisement in another column, through whose agency the parties are likely to be fully tested, and the results submitted to the public.

MINE ACCIDENTS.

The Low Quarries, Shrewsbury.—During Wednesday night a large portion of stone fell from its position, amounting in quantity, it is said, to 400 tons. Fortunately, the occurrence took place by night; if it had been during the working hours, the loss of twenty or thirty men, at least, would have been the result.

Whitehaven Colliery.—T. Cooney was severely crushed by a fall of coal, *Cunningfield, Lanshire.*—J. Ashton had his leg broken, while employed at one of the coal pits belonging to Messrs. Foster and Lees, which caused his death.

Newcastle-under-Lyme.—L. Cureton was killed by a stone from a coal bankset.

Glasgow.—As J. Allison was underworking a part of the coal wall in the Carron coal pit, the coal fell, and buried him in the refuse.

Cumberland Colliery.—Five miners were killed, and several others severely injured, by the upsetting of a trailer, on which they were returning to Dearham from work.

Bent Wheat Lane Mine.—W. Lowerson was killed by a piece of timber falling from the mouth on the head.

Tyrkellen Mine.—H. Gilpers has since died from the effects of injuries received while at work on the Old pit.

Marshall's Pit, Hanley.—As W. Hodgson and a companion, after having repaired a blast, were awaiting its explosion, a large stone, which had been loosened by a somewhat distant blast, struck him on the head, and left him with little signs of life.

IMPROVEMENTS IN STEAM-ENGINES.

(Abstract of specification of patent granted to George Bennetts, of Gwaly Lake, in the county of Cornwall, civil engineer, for improvements in steam-engines and boilers, and in generating steam.)—From the *Mechanics' Magazine*.

The invention consists in the construction and arrangement of certain apparatus, in connexion with the engine and its boiler, for the purpose of rendering the steam which has been employed in working the engine, and is on its passage into the condenser or into the atmosphere, available for heating the water from which the steam is to be generated; and it further consists in generating steam, by injecting water in small jets into generators clear of water, and maintained at such a temperature as to convert the water into steam on its coming in contact with the surface of the generator.—The first part of the invention consists of a vessel formed of three cylindrical pieces, bolted together so as to make steam-tight joints; at each of the pieces where these pieces are joined there is an internal projection, which reduces the area of the vessel at that place so as to allow only sufficient space for the water, at each stroke of the pump, to pass in a thin sheet between the outside of the eduction pipe and these projections; the eduction pipe passes through this vessel, and at the end of the vessel, where the pipe protrudes, a steam-tight joint is formed; this vessel is to be capable of containing as much water as is required to supply the engine with steam for eight or ten minutes; a double-action forcing-pump is connected at its eduction passage, by means of a pipe, with the aforesaid vessel—and at its induction passage, by means of a pipe, with a discharge cistern; there is also a pipe leading from the aforesaid vessel to the generators or boilers; a valve is placed in the pumping-engines, which should be kept open while the engine is in motion, so as to offer no resistance to the steam in passing from the cylinder; when the engine is at rest this valve should be shut, and the steam allowed to pass into the eduction pipe, where it gives out its heat to the water in the aforesaid vessel. The mode of action of this part of the invention is as follows:—If the aforesaid vessel is filled with water, and the pump set in motion, the water which it forces into the said vessel will circulate through it for eight or ten minutes, until it is forced into the generators or boilers, and, during the time it has remained in the said vessel, will have taken up as much heat as the steam is capable of communicating—and the water entering at the part of the vessel next the condenser, where the eduction pipe is coldest, and being forced out where the same eduction pipe is hottest, it is forced at each stroke of the pump into a hotter portion than that which it occupied before; whilst the area of the vessel, being contracted so as to allow only sufficient room for the water forced in by the pump to pass freely, prevents the water that has already passed these places from returning. The patentee states, that he does not claim the use of steam after it has performed its work in the cylinder generally, for the purpose of heating the water, but only when applied according to the modes described.

The second part of the invention consists in a mode of generating steam by injecting water upon the surface of metals raised to such a temperature as to convert such water immediately into steam. There is a flue leading from the fire-place to the back end of the generators, the width of which flue is equal to the sum of the diameters of the said generators; on arriving at the end of these generators, opposite the furnace-door, the flue turns upwards, and joins a flue at the ends of the generators, which divides and enters flues which proceed to the chimney; the generators (which are made of any metal of sufficient strength to bear the pressure of the steam, and remain uninjured by the action of the fire) are so connected at their ends, by means of pipes and branches, as to form one continuous vessel; a pipe leads from the water-heating vessel, through which the water passes into the generators, through branches and pipes placed in the interior of the generators; these pipes project as far into the generators as the end of the fire-place, and are perforated throughout their length with small holes; they are also furnished with a flanch of the same size as the external diameter of the generators, to the ends of which they should be fastened by means of an internal flanch. The manner of using this part of the invention is as follows:—To start the engine, a sufficient quantity of water is placed in the generators—and, if it be not wholly used in such starting, no more water is to be injected until it is exhausted; when the water is exhausted, the force-pump is to inject at each stroke of the engine a sufficient quantity of water to supply the engine with a stroke of steam; the water being divided by the aforesaid perforated pipe into a number of minute jets, and coming in contact with the heated surfaces of the generators, is converted into steam, which steam proceeds to the engine, or escapes into the atmosphere; the steam being made to pass through the generators, has its elasticity increased considerably—whilst the water is converted into steam, when thrown on the aforesaid heated surface in such minute jets, with less fuel than is used when a body of water is suffered to lodge in them; the fire may be regulated by any of the well known means—and care must be taken not to over-heat the generators, which ought never to be brought to a temperature approaching to a red heat; a double-action pump is preferred for injecting the water, as the supply is much more regular than it would be with a single-action one; to regulate the quantity of water to the demand of the engine, the chamber of the pump should be connected, above and below the piston, by a pipe large enough to allow the water which the pump is capable of raising to pass freely through it. The patentee states, that he does not claim the use of any of the several parts of steam-engines and boilers hereinbefore described, except when the same are employed in and for the constructions and arrangement of the apparatus for the heating of the water by the eduction of steam, and in and for the generation of steam, as above described.

New Methods of Preventing "Priming" in Steam Boilers.—Notwithstanding the numerous schemes already before the public, intended to obviate the evils of priming, it would appear that they have not extinguished the remedial appliances within the compass of engineering skill. One method combating the evil has, within these few months, been patented by Mr. David Napier, of Millwall, and another has been secured by registration, by Mr. John Allen, of London. Mr. David Napier's mode consists in covering the surface of the water in the boiler with hollow metallic balls—preventing, however, that the lines and surface should exclusively be the use of balls, or to balls which have a less specific gravity than water; for other substances, even pebbles, may be employed provided they are supported in the interior of the boiler by any mechanical means, as by wire gratings. Wood, he remarks, answers the purpose very well, and hollow glass balls would answer better, were it not that they are too fragile, where there is much agitation. He, therefore, gives a preference to the metal balls as they always tend to preserve the level, and prevent, at the same time, excessive and irregular intervals for the steam to pass through. The effect which the patentee expects to be produced by these balls, is, in the first place, to still the water so as to prevent its rising up in quantities with the steam; and, in the next place, that the surfaces of the upper tier of balls will serve to intercept the smaller portions of water, and so allow the steam to issue off comparatively dry.—Mr. Allen's mode of preventing priming is different; the apparatus employed is a metal tube, perforated with numerous small holes, which is to be attached to the receiving end of each pipe which leads from the boiler of a steam engine into the steam chest, and also to the receiving end of each pipe which leads from the steam chest into the engine cylinder. Both of these pipes appear to be simple and ingenious, and we have no doubt of their efficacy within certain limits. We may also observe that great priming is not the only evil encountered. When engines are worked by steam of two atmospheres, and upwards, an inconsiderable portion of the water is carried off with the steam in a state of minute subdivision, but still in the liquid condition; and, as it has no elasticity, and, therefore, produces no good effect, a serious loss of fuel is sustained, amounting in the case of locomotive engines to an average waste less than a fourth of the whole. Any contrivance, therefore, by which this evil might be lessened, is worthy of consideration and encouragement.—*Glasgow Practical Mechanic.*

Supply of Water to Boilers.—Many proposals have been made, and many plans adopted, for the regular supply of water to the boilers of steam engines, and the proposal to a correspondent of the *Civil Engineer* for this purpose—Mr. Carr, of Petterhead—appears to us equal to anything we have seen. He recommends a close-covered cistern of cylindric form, the centre of it to be on a level with the water line in the boiler; at the top and bottom, at one end, are two openings, communicating with the boiler, acted on by a common slide valve in such way that both open at once; at the other end is a pipe communicating with a reservoir, to keep the cistern supplied, also acted on by a valve, so connected with the engine that the latter is to open while the two former are shut, and vice versâ; and by this simple means the boiler will be always kept supplied in the proper terms; the water cannot be over-supplied, and every motion of the piston lifts to an inch water in the cistern as it has previously given out to the boiler.

Indian Rubber Patentees at the Admiralty.—That portion of the Indian rubber patronage which has been held down in the basement of the Admiralty, at Whitehall, has been turned to a very effectual account; three heavily-laden coal waggons, each carrying seven tons, were driven over it, when the government became considerably compressed, but, from close attendance of the patentees, immediately resumed its former appearance, as soon as the waggons passed.

SCOTTISH EQUITABLE LIFE-ASSURANCE SOCIETY.

In our numerous notices of these excellent institutions, so much has been said of the benefit they are capable of conferring on all classes of the community, and to so much greater an extent are their advantages appreciated than formerly, that we need not enlarge upon the subject. The vast increase within the last ten or twelve years in the number of these offices established on the mutual principle, proves how much public attention has been turned to the subject, and, from the patronage they receive, it is clear a very general impression exists that a subscribed proprietary capital is not necessary to ensure the payment of the policies to the assured; but, where lives are carefully selected, and the revenues prudently invested, experience has proved, that not only are the policies secure, but a large profit may be periodically divided among the assured, who are the proprietors. The company whose named has now been established thirteen years, and numbers among its directors and supporters many highly respectable individuals in both England and Scotland. Their scale of premiums are based on the known certainty of human life in the aggregate, and are of the most liberal kind, and, by a recent alteration of the laws of the society, triennial, instead of septennial, investigations are to take place, and a consequent more frequent division of the profits, either by corresponding additions to the sums specified in the policies, or by making a comparative reduction in the annual premiums—a strong inducement is held out to those persons who are about to ensure their lives to join this institution. Up to March, 1843, after deducting lapsed and surrendered policies, the total amount assured was 1,707,710*l.*, the annual revenue of which was about 64,000*l.*; after providing for every claim which could possibly be made against the society, the accumulated fund had increased during the previous year from 191,436*l.* to 227,753*l.*, and, at the allocation of profits in 1841, an addition of 2*l.* per cent. was made on all policies of five years' standing. The above facts speak for themselves, and hold up the Scottish Equitable Society as being undoubtedly secure, moderate in the rate of premiums, and making a more frequent division of the surplus than, we believe, any other office.

HALL OF COMMERCE.

A neatly written article, and a well executed lithograph, in a recent Number of the *Westminster Review*, ushers forth to its readers the public claims which this building has on the mercantile community. We have, on more than one occasion, adverted to it, and highly pleasing is it to us to find that its number of subscribers now exceeds 3000; the papers, periodicals, and reports from the various shipping ports and inland districts, we believe, exceed in number anything of the kind we have heretofore been used to in London. Lloyd's has its shipping returns, the Jamaica and North and South American its papers, the Baltic and others, be like manner, each having claim to the acquisition of all information connected with the particular interests of those who are frequenters or subscribers; but it was left to Mr. Mushay to establish a Universal Hall of Commerce, and this, in the strict sense of the word, he has fully accomplished. We have watched with interest, if not anxiety, the advance made, and regretted that on the opening of the Hall of Commerce it did not receive that support from the community at large which it so justly deserved, but it is pleasing to find that with the liberality evinced by the proprietor, a like liberality is employed by the public; while with increased success and support, we have only to record increased exertions to secure it, and to manifest the feeling which has ever been exercised.

It is not our province—nor, indeed, is it necessary—to offer any observations on the building, with which our readers—or, we presume, at least, those resident in, or visitors to, the metropolis—must be well acquainted; the ground floor, as we have, on a former occasion, observed, consists of two lofty and spacious saloons, of noble proportions, the dimensions of one, which may be termed the "Hall of Assembly," being 130 feet long, 44 feet wide, and 50 feet high. We cannot close this brief notice—which we give rather as congratulatory to Mr. Mushay, the proprietor, than from any other object, as the utility and value of the "Hall of Commerce" are now too well appreciated to require approbation on our part—without giving insertion to the concluding paragraph in the Review, on which we may have some observations to offer on another occasion.

The following are the remarks on subject of city improvements to which we refer:—"The hall of one of the richest companies in the city—the Merchant Taylors' Company—is nearly opposite the Hall of Commerce, and a narrow strip of ground, at present uncovered, runs in front of their hall. Will it be believed that the company, instead of following the example of Mr. Mushay, in widening and embellishing their narrow street, have actually leased this slip of ground for building, to hide their own hall behind a screen of houses, leaving the street as impassable as a thoroughfare on the days of their own grand entertainments, that it is then usually closed by the Lord Mayor against the public, to admit the private carriages of invited guests. We trust another equally obvious improvement will not share the same fate—we allude to the proposition of widening Threadneedle-street, by pulling down the three houses at the corner, an improvement which, we understand, the corporation have power to effect, if they think proper, by their existing Act. This would enable Mr. Mushay to build a western *façade* to the Hall of Commerce in a most commanding position, and where it would constitute, perhaps, more than any other building, to the architectural embellishment of the approaches of the new Royal Exchange."

THE CLAIMS OF THE DUCHY OF CORNWALL.

Two important letters have been addressed on this subject by Sir C. Lemon, one to Sir William L. S. Trelawney, informing him that various interviews had taken place between the Duchy authorities and the deputation, who advocated the claims of the tenants, and suggesting the formation of a committee to watch the measures about to be introduced; the other to J. H. Tremaine, Esq., informing him of an interview with the H. Peel and Lord Lincoln, and detailing the outline of the plan proposed by them—viz., 1. To appoint a commissioner—the commissioners to be named in the bill, whose duty will be to inquire into encroachments—to settle and to designate a certain annual rent-charge, to be paid by the tenants in future, as a fair equivalent for the fines, heriots, and other manorial charges, heretofore paid to the lords, in the ascertainable manner. 2. The second provision enfranchises those unascertainable tenements, and renders them freehold, subject only to the rent-charge. Till the rent charge is determined, the tenants will be left in the undisturbed enjoyment of all that they now possess; and when the commissioners shall have made their award, that award shall be final and binding for ever, unless altered by appeal in the Queen in Council, within the space of one year. 3. The provisions of the sudden dropping fee shall be extended to the Duchy generally, excepting only as to undiscovered minerals, under encumbrances as the owners, however entitled they may be. 4. The Duchy are to have an undisputed right of entry, and to work and carry away all minerals, stones, and clay, in any of the ascertainable manors; but they will be bound to give ample compensation for damage done to the surface; which compensation shall be assessed by arbitrators, one of whom shall be named by the Duchy, one by the tenant, and, if necessary, a third by the other two. A power is also to be given by this bill to the Duchy to sell, exchange, or alienate their lands. Sir Charles considers, by stating how critical is the present moment, and calls upon the parties whose interests are at stake to relieve them from acting on their own responsibility, and supports the propriety of meeting Mr. Windsor-on and himself, to enter known their views, and thus enable them to act safely upon them.—A meeting was held at Redruth, on Thursday last, to take this subject into consideration. We shall give the particulars in next week's *Journal*.

Mining in Cornwall.—We are requested to insert the following particulars, in explanation of a paragraph published in last week's *Journal*, descriptive of some discoveries in the district of St. Ives, in which we attached a note expressive of our desire to indorse such, and the accounts of parties exercising caution with reference to new adventures:—Carpenna and Barley Mines (parts of the old St. Ives Consols) commenced working—the former about two years since, the latter during last summer; whose lessees of the adventurers in each mine are gentlemen resident in Truro. In Carpenna the prospects are very good; the ore and copper being of first rate quality; the deepest level at present being sixteen fathoms from surface; hope to sink a few feet more, as yet unwon; a 60-inch cylinder engine to be erected. In Barley, about three months since, a rich tin lode, averaging ten inches big, and intersected at 50 feet (which was cut in the cliff at low tide) from surface; they are now driving south to get a deeper hole of great promise, from the rich ends frequently found in the old mine's bounds."

Alston Moor Lead Mines.—The commissioners of Greenwich Hospital, lords of the manor of Alston Moor, have, for the encouragement of mining speculations, reduced their dues on lead ore from the bounds of the moor from one-sixth to one-seventh of the lead ore raised in the manor.

New Fortified Line Boat.—Captain Chasse, a gentleman at present residing in Paris, has invented a line-boat of entire new construction, the details of which are now being tested by the French Board of Admiralty; it consists of a boat or vessel, to which is attached, at a certain depth, on either side, and, however it may upset, will always immediately right itself; its body is made of waterproof and impenetrable cloth; the ribs of iron, and particularly elastic, issued together like the framework of a parasol, and strengthened with strong slips of whalebone; the cloth is of canvas, lined from stem to stern in a manner so as to be perfectly watertight, and in which apertures are made for the passage of air, with a view of being continued to the inside right round the waist of each, and effectually excluding the admission of the water. When an alarm is given a portion begins, by means of hand spreads, and in less than eight minutes the vessel is covered by means of a cuirass height, for the edges of the cloth just to touch the ground. One of these boats, thirty-two feet in length, one metre deep, forty to fifty persons, and, of course, will be quite capable for every ordinary sea long voyages, as well as much efficient to be kept on the open ocean.

MR. HENRY ENGLISH, of No. 5, SHORTER'S COURT, THROGMORTON STREET, CITY, having, at the instance of numerous friends, made the necessary arrangements for exercising the business of AGENT in the PURCHASE and DISPOSAL of MINERAL and other PROPERTY, as also that of STOCK and SHARE-BROKER, is induced to solicit the favour of the support of the subscribers to the *Mining Journal, Railway and Commercial Gazette*. The extended circle, arising from his immediate connection with that publication, may be fairly presumed to afford more than ordinary facilities and advantages in the transaction of business on colonial calls and mine agency; to which may be added, an intimate acquaintance, for the last fifteen years, with the mines and collieries of Great Britain and Ireland, as well as some parts of the continent.

5, Shorter's-court, April 9.

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N.B. The Third Annual Report may be had at the office.

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with power to add to their number.

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SECRETARY—Mr. [illegible], Richmond.
SURVEYOR—James Gowland, Esq., Wakefield.

The object of the present undertaking is to avail itself of the provisions of the Act 9 and 10 Vict., c. 101, for the purpose of extending drains into districts, on the one hand, where the parties entitled to the inheritance are unwilling to undertake the operations themselves, and on the other hand, where the tenants, from the uncertainty of their tenure, are unwilling to lay out their own capital in the improvement of the land they occupy. [illegible] the Association will be prepared to advance the requisite funds, the repayment to be secured by a charge upon the land, with interest at 5 per cent. per annum, and a sinking fund of 1 per cent. per annum, for the term of 22 years, with a power of redemption exercisable at any time after the first seven years, on payment of a fine of 5 per cent. on the amount then remaining unpaid.

The CAPITAL to be at first £100,000, with power to increase it to £200,000, with a deposit of 5 per cent. on the amount; the interest and fine of 5 per cent. on the capital to be the only profit to the shareholders, for the benefit of which the whole of the remaining 95 per cent. will be employed.

The MANAGEMENT to be under a committee of management, to consist of [illegible] directors, with power to add to their number, as circumstances may require, but not to exceed the number of twenty-one.

The SECRETARY of the Association is empowered to be the local solicitor, or otherwise as it may be found advantageous or encouragement to the local solicitors, or officers of the Association, with the most efficient staff that can be obtained for practical and economical duties, with their necessary superintendents.

The GOOD WILL to be to Trust, with reference to other towns of the county and elsewhere, on the division of the profits of the Association, and requires, but as it may be found advantageous to extend the operations of the society.

The SURVEYOR of the Association is empowered to be the local surveyor, or otherwise as it may be found advantageous or encouragement to the local survey

MR. HOPKINS'S SYSTEM OF MINERALOGY IN CONNEXION WITH TERRESTRIAL MAGNETISM.—No. IV.

The eleventh chapter treats on the northward and undulating movement of the earth's surface en masse, by the constant circulating action of the magnetic currents, and as it embodies the very principle of Mr. Hopkins's theory, we publish it entire.—"From the apparent quiet and regular succession of natural events to which we are accustomed, and the repugnance we feel to the idea that it is possible for the common course of nature to change the general appearance of the surface without causing interruptions, we might, without due investigation, almost persuade ourselves that the physical features and conditions of the globe possess an unchangeable character. Indeed, the general phenomena of nature which are daily before our eyes, are often those which are considered the least attentively. In looking at an extensive forest for a hundred years, it would appear to a superficial observer that he was viewing the same identical substances all the time, yet there is no truth more certain than that the whole, or nearly so, would entirely change in the interim. Continents are changing their physical aspects and configurations—emerged and submerged from the level of the ocean, and moving in masses, unobserved by the millions of animated beings who have their existence on them. Generation after generation disappears while others are taking their places, and so gradually and imperceptibly are these effected, that without reflecting a little, and comparing the past with the present, we almost look at things as if they had been always in the same state. So familiar and reconciled we become to the altered condition, that the past is soon forgotten, and man, who is linked to these renovating laws of nature, too often forgets his final destiny. That the dry land does not possess that fixity of position, or that it is not a solid and immovable mass attached to a solid globe, as formerly supposed, is now well known; and the earthquakes of South America abundantly testify that the surface is a flexible crystalline compound floating on some more dense fluid, and subject to perpetual movements. There have been very opposite opinions entertained respecting the effects of the earthquakes on the coast of Chili. Some maintain that the coast was permanently raised at various points during the earthquakes of 1822-34-35, &c.; others oppose such statements by very circumstantial evidence; yet both parties agree that the coast is at present at a higher relative position at various points than it was formerly. That such a disparity should occur in observations made by parties who were living on the spot is somewhat singular, and shows how cautious we should be in drawing conclusions on observations made by a hasty survey. The cause of the above conflicting opinions is simply this: the whole western coast is gradually rising, from Terra del Fuego to central America, and so insensible is the action that it is effected unobserved, until an earthquake draws attention to the changes, when the whole is immediately attributed to that phenomenon by those who may not have attended to the exact height of the sea previous to the shock. That the earthquakes do occasionally cause undulations in the coast there can be no doubt, but they are comparatively insignificant to the great changes effected by the silent operations of nature. The electro-magnetic tension is sometimes so great in the Chilian range as to cause immense transverse fractures and meridional splits, from which water is sometimes seen bursting out. With regard to lands being gradually elevated and depressed, unaccompanied by earthquakes, Professor Lyell has abundantly proved in his *Principles of Geology*, and has also made very lucid observations on this part of our subject. The coast of Brazil is subject to changes like the Chilian coast, although earthquakes are seldom felt there; but we have more satisfactory proofs in the gradual sinking of the western coast of Greenland, and the equally slow and gradual movement taking place throughout a large part of Sweden and Finland, and a number of other parts in the northern hemisphere, where earthquakes are seldom felt. How much more satisfactory and consistent with the ordinary laws of nature is it to regard these grand operations as regular and necessary effects of great and general causes of the action of terrestrial magnetism, than to suppose them as resulting from a series of convulsions and catastrophes, regulated by no laws, and reducible to no fixed principles! In making comparisons between the ancient latitudes of twelve places in South America with recent observations, we find an average difference amounting to about twenty minutes in favour of a more northerly position. Humboldt took the latitude of Maricaita about forty years ago, and made it 5° 13′ 0″ north. The author continued a series of observations in the same neighbourhood, and connected the above point with others by trigonometrical measurements; the latitude of the same spot is now 5° 25′ 30″. The observations were not confined to a star or the sun alone, but taken from various celestial points, with their complementary angles, by fixed theodolites, a sextant, and a repeating circle. Similar observations were made at other points. It is, therefore, concluded that South America is not only subject to vertical undulations, but also to a *horizontal* movement en masse northward, amounting to at least ten seconds per annum. However, we shall not dwell on this fact, but shall refer to other evidences, as being more substantial and satisfactory proofs of the northerly movement of the earth's surface. It is the necessary consequence of the action of the polar force, which may be proved by an artificial globe having an electro-magnetic axis, placed horizontally in a fluid containing salts; the masses formed at the negative pole will be found propelled as they are formed toward the opposite pole. Granting these notations in the southern hemisphere, it may be said that they cannot have been going on during the last thousand years in the northern hemisphere, otherwise they would have been detected by astronomers, as the latitudes of places must have varied. Let us examine what were the actual appearances of the islands and continents, with their respective positions in the time of Ptolemy. In comparing Ptolemy's observations with the present we recognise great discordance. Even at the beginning of the last century the position of places could not be depended upon within twenty minutes. Let us suppose that the position of a place was known a hundred years ago, and that it was situated exactly in the equator; in comparing the same point at distant intervals of time with the same celestial objects, we find a difference amounting to a measurable quantity; and this difference is proved by astronomical observations to be in one direction. Consequently, in order to denote the latitude, or rather to preserve it in the same relative spot, the position of the celestial objects must be altered. This change is called the precession of the equinoxes. To account for this movement it has been assumed that the axis of the globe is continually altering its relative angular position in space, which apparent movement during the historic period has been *northward*. The amount of this motion, by which the equinox appears to travel, is fifty seconds per annum, producing a change along the meridian of about nineteen seconds. This relative change destroys, in the lapse of a moderate number of years, the arrangement of the catalogues of stars, and makes it necessary to reconstruct them. Since the formation of the earliest catalogues on record, the place of the equinox has retrograded about 30°.

When the above hypothesis of the precession was propounded, the earth's surface was considered as a fixed and immovable mass. So little was known of the phenomena of geology, magnetism, &c., that they were not consulted; hence a change of the whole globe appeared necessary to account for the observed results. The cause of such a movement has been attempted to be explained by the assumed geometrical forces. It would be easy to analyse the hypothesis, but as we have questioned the very foundation of the principle on which it is founded, we need not dwell on it here, but simply state, that the movement of the surface of the globe northward accounts for the above effect in a more convincing manner, and more free from intricate computations, than the *geometrical physics* now used in astronomy. Besides, the supporters of the theory have a residual ph enomenon equal to about ten seconds unaccounted for, and another movement in the ecliptic; hence we have abundant proofs by celestial observations of terrestrial changes in a northerly direction. It may be argued, that if the masses of dry land, which are now situated near the north pole, containing organic remains belonging to the tropics, have been propelled there by such a slow northward action, it must take some thousands of years since they were in the torrid zone more than we admit according to our chronology, supposing the relics are the remains of those given to man. There is no proof that they are not the relics of those given to man, and we have abundant evidence of the fossils of the earth's organic beings being found with those which have become extinct; therefore no line of separation can be legitimately drawn between them. With respect to our chronology, it is not well defined—that is, not a demonstrable quantity; it is a mean of a compound composed of uncertain quantities, therefore necessarily an uncertain amount. Not one of the chronological records was considered sufficiently correct to be adopted—neither Egyptian and Chinese were hitherto—therefore it is useless to enter into this question; besides, it matters not to our creed whether the globe was created 7000 years or 50,000 years ago; time cannot make any difference in a faith which is founded on too firm a foundation to be shaken.

Plato says that the world changes its superficies in every respect; that the heavens and the stars appear to change and reverse their movement by time, in such way as that the east appears to become the west; we find also the Egyptian priests acquainting Herodotus, that from the commencement of the dynasty of their kings (which according to their computation extended to more than 11,000 years) the sun had apparently changed his course in the heavens four times. We can easily conceive that a country like Australia, which is now south of the tropics, if brought up to the northern hemisphere, would cause the sun to appear to rise on the left instead of, as in the former situation, on the right; probably such effect was the origin of the above notion of the Egyptian priests. The observations of the ancient philosophers have been lost in the lapse of ages; however, we have great advantages in our present investigations; the records of the past have been laid down and preserved by a power beyond the reach of human control; we may recall the past and anticipate the future by means quite independent of the conflicting and imperfect evidences of human record. With regard to the actual time since the creation of the system, it is a question so totally beyond our reach, that it is as useless as it is unreasonable for us as finite beings to enter upon the subject; all that we can legitimately speculate upon is the nature of the dry crust we call land. The comparatively recent origin of the existing organised beings appears abundantly evident, and there is a still more decided proof that the whole of the present dry land as it becomes oxidated at the north pole, will come to an end; and unless a corresponding dry land continue to rise from the southern hemisphere, towards which the living system may retrograde, the world must come to an end, independent of the existence of the globe itself as a body in space. There are many philosophers who admit, in its full extent, the doctrine of final causes, as evinced in the structure of a plant or an animal; or, in other words, who readily grant that all the various parts and organs conduce to one definite purpose; yet they are reluctant to allow that the earth itself is under any other guidance than an irregular and confused igneous element. We have no reason to suppose that the laws which govern the whole body of our planet are not directed by the same wisdom as that displayed in the external world. Every part of the surface of the globe is adapted to the wants of man, and the inferior creation by which he is surrounded; it is not the result of chance, or of any imaginable fortuitous circumstances, but the production of a season—it has its beginning and ending, like animated nature."

Lead Ore.—The Board of Customs having had under consideration the applications of several parties, referring to a minute of September, 1839, under which foreign copper is allowed to be taken out of the warehouse for the purpose of silver being extracted therefrom, and a like quantity of copper is permitted to be returned and warehoused at any other port for exportation, and requesting that a similar indulgence may be granted in respect to the article of lead, and there not appearing to be any objection therein, the board have issued a general order for the information of the officers in London and at the several outports, and the public, directing that the minute in question be extended to that of lead accordingly.

The Roanoor Mining Disputes.—We learn, from the *Chester Chronicle*, that the following are the terms on which the parties have ultimately arranged:—That a juror should be withdrawn; all matters in difference between Mr. Thomas Edward and Mr. Edward Lloyd Ward and the lessees of the Cefn Mine, and their mortgagees, trustees, and assignees, referred to Mr. Trafford, on the usual terms, who is to say what is to be done between the parties, and to have power to direct if he shall think fit, in what manner the present works of the several parties, if carried on, are to be conducted for the future as respects each other; no further proceedings to be taken on any of the indictments now pending in Denbighshire, and a *nolle prosequi* entered thereon.

Capital Invested in Railways.—By a return recently made to the House of Commons, of all monies to be raised under the sanction of Railway Acts, it appears that in 119 railways there is no less a sum invested than 79,026,317*l.*, of which 57,387,735*l.* is original joint-stock capital, and 21,638,582*l.* loans or mortgages. Extraordinary as is this amount of property, created in about fifteen years, the difference in the magnitude of the undertakings is not less striking. While some of these joint-stock speculations have been completed for 10,000*l.*, 14,000*l.*, 16,000*l.*, and 18,000*l.*, and forty of them under 100,000*l.*, those gigantic concerns, the London and Birmingham and Great Western, have cost—the former 5½ millions, and the latter 5 millions (wanting 1*l.*); the South-Eastern above 3½ millions; the North Midland nearly the same; the Manchester and Leeds 3½ millions; five others exceeding 2 millions; and thirteen others above 1 million sterling. These are independent of the numerous railway bills now before Parliament, and it is probable that, in two years, the capital embarked in railway property will exceed 100 millions.

Rating of Railways to the Poor Rate.—*(From a Correspondent).*—A case of considerable interest came before the Lewes Quarter Sessions, on Wednesday last, being an appeal by the Brighton Railway Company against a rate made by the overseers of Cuckfield, in Sussex, in 1843; there were appeals against the rates in four other parishes, but as all parties wished the affair definitively settled, the five parishes joined, and agreed to abide by the decision on this one case.—Mr. Cobbett and Mr. Rowsell appeared for the company, and Mr. Creasy and Mr. Wyatt for the parish.—The ground of appeal was "that the company were rated and assessed at a higher rate than they ought to be," the rateable value charged upon them by the parish being 1964*l.* 3*s.*—producing a rate of 139*l.* 16*s.* 4½*d.*; while Mr. Cobbett contended that the real rateable value, according to correct calculation, was 293*l.* for that portion of the line situate in Cuckfield parish.—After several surveyors and engineers had been examined on behalf of the rate, and the accountant, resident engineer, and carriage-builder of the company on their behalf, the rate was confirmed.—The trial lasted upwards of eight hours, and the greatest interest appeared to have been excited as to the result.

Effects of Railways on Foreign Commerce.—The extraordinary effects of the increased rapidity of transit secured by the railroad system, not only as merely shortening the distance from town to town, but even on our commercial relations with the continent, are fully exemplified in some alterations which are about being made to the conveyance of a staple commodity of one of the midland counties—viz., salt. The saliferous district of Cheshire, Nantwich, Droitwich, &c., produces more of this necessary article than any other salt mines, we believe, in the world, and it has hitherto been principally exported from Liverpool, continental vessels coming in ballast for the purpose. By the new full development of the railways through the midland and northern counties, arrangements are being made to transmit the salt by canal to Manchester, and thence by the Manchester and Leeds, Leeds and Selby, and Selby and Hull Railways, to the latter place for shipment, thus not only shortening the time to the Baltic about one-half, but the great probability is, that vessels now come in ballast, owing to the length of the voyage round the Channel, will, in future, bring cargoes of grain, and thus cause an interchange of two great necessary commodities. One large wholesale house at Liverpool has already an establishment at Hull, and 300 waggons are building expressly for the purpose. It is also probable that Welsh slates, and other articles of consumption, will find their way across the island for shipment from our eastern ports.

The "Great Britain" Steam Ship.—Mr. Austin, the ingenious inventor of a plan for raising sunken vessels, we are informed has offered his services to the Great Western Steam Ship Company to raise and float that gigantic vessel out of the Bristol Dock. We have already spoken highly of Mr. Austin's plan, and have no doubt that if fair opportunity be allowed him, he will be successful in relieving the *Great Britain* from her present dilemma, without hazarding the great risks which would be required to be run in altering the dock for the purpose.

The Great Fossil Tree.—Dufferton clide quarry is still visited daily by numerous individuals, to inspect the colossal remains of the form of a former world, which was some weeks since discovered there; a considerable deal more of the superincumbent stone has been removed, and that portion of the tree now caps of nineteen feet, 6 in.; the body of the trunk for about thirty feet appears first round, in some measure similar to some colossal Egyptian pillars; the top or head is well exposed, but they have not yet reached the root, which will, probably, excite gratification to decide upon the identity of the genus; all the parts of the tree to the centre are filled with particles of clive, and the, with the exception of its woody like texture, the appearance of the surrounding stone. In the new road now being formed from Bridgtree to Tavistock an extraordinary fossil track, of some description of a quadruped, has been found and carried through the meadows reaching on the Dudley and Westlake tenements; the base is evidently perfect, but pressures are cast; the top is broken off, but, from the shape (that of a thumpy cone), it is probable a branch of leaves formed the head, and received its nourishment from the atmosphere; it is two feet in diameter at the base, and about a yard in height to the two-fossil part, and is intended for the museum of the Dudley and Midland Geological Society.

ORIGINAL CORRESPONDENCE.

MINING TERMS—"VEINS" AND "LODES."

Sir,—I find that the definition of the terms *vein* and *lode*, given in my letter of the 25th ult., is considered by one of your correspondents not sufficiently intelligible. This I regret—for I know not how to state my meaning more clearly than by repeating; that any fissure in a rock, containing mineral matter, whether metalliferous or not, is a mineral vein, but that a *lode* is a mineral vein containing metallic ores. But your correspondent says—"We have quartz lodes, lodes of carbonate of lime, &c.;" and here I must join issue with him—for the good old Saxon word *lode*, or *load*, has unquestionably been used for centuries in this country by miners to signify strictly a metalliferous vein; and if of late years a confusion has been introduced, and so very definite and comprehensible a term has in any way lost its definiteness, all I can say is, that the sooner we return to its original sense the better it will be. As a matter of fact, however, I believe the distinction is very well understood in our mining districts, though it may be sometimes forgotten.

Jesus College, Cambridge, April 8. D. T. Ansted.

MINE SYPHONS.

Sir,—I beg to say, that I noticed in your valuable Journal of the 18th ult. a letter from a Cornishman, calling himself "A Miner," saying, "that Mr. A. T. J. Martin is wrong in proposing the application of syphons in draining water from a mine." Your correspondent may be a miner; but allow me to say, Sir, that he cannot be considered by scientific men but as a novice in hydrostatics. He says, "experience has taught me"—"practice has taught me"—and now, I should be glad to know, what has his knowledge and judgment done for him? The distance from Liskeard to Duchampton is not great—and I would recommend him to take a walk, on some leisureable day, to visit Lowfreechard Lime Quarry, near the latter place, where he may see one at work, on the very same principle as many more are now, and have been for several years past, at work in this county—draining the water from the mines, through wingers. The syphon near Duchampton has been at constant work for about twenty years—and a better apparatus for draining water, to the depth of thirty feet, from wingers, has never yet been applied in Cornwall, or any other mining district. I hope Mr. Martin will write again on the subject; and, in conclusion, beg to ask him, or some other of your scientific correspondents—What sized pipes are required for the regular discharge of 300 gallons of water per minute?—the discharge end of the syphon to be one foot below the level of the bottom of the winze. W. Wheelan.

Carnarvon, April 9.

IMPROVEMENTS IN THE MANUFACTURE OF IRON.

Sir,—Mr. Booker's letter occupied my observation until Saturday last, and, therefore, too late for a reply in your last Journal. The letter which has so singularly excited Mr. Booker's ire, upon re-perusal, will be found by every impartial reader to refer wholly and exclusively to the long article contained in your Journal of the 9th ult., headed "Improvements in the Manufacture of Iron," and does not contain one single sentence savouring of personality. I have, however, elicited from Mr. Booker his own statement of yield, as to metal and coal, and, at most, his patent is but an evasion of that patented eleven years ago by Messrs. Jones and Bother (the then firm at Wolverhampton), and at this day successfully carried out at two separate establishments of theirs, to an extent of 350 to 400 tons weekly, and with better results than those laid claim to by Mr. Booker. The yields given in my letter were the results produced ten years ago, and which I considered would answer every purpose for showing up the absurdity of the figures to which they had immediate reference, although at the time they were given I was quite aware that my own forge was producing a much better result. I hate anything in shape of "false colours;" and, as to my being really a Welsh ironmaster, I will only say, that I have been a maker of pigs, metal, and puddled bars, longer than Mr. Booker has been a maker of tin plates, and have made more tons of those commodities than he (Mr. B.) has made of boxes of plates. I am, Sir, your's obediently, as magpie in peacock's feathers, but an old

April 11. Welsh Ironmaster.

ON THE NATURE AND CAUSE OF STEAM-BOILER EXPLOSIONS

Sir,—By some accident, the communication, headed "The Steam Boiler Explosion at Bradford, Yorkshire," in your Journal of 21st ult., escaped my notice till last evening. Dr. Murray, in that communication, boldly offers his opinion as to the cause of the catastrophe; and, as his sentiments will certainly carry much weight with them, I wish—as I find myself compelled to dissent from his views—to offer as early as possible a few words on this most lamentable affair; that, in case the Doctor's opinions should for once prove erroneous, no evil so great as that of extenuation of an act which may deserve the most severe denunciation, may arise from the dissemination of Mr. Murray's ideas without any expressed dissent. We are both of us in search of one truth—we both desire to arrive at the real facts of the case; and I believe I shall not oblige any of your readers more than the benevolent Doctor himself by the exposition of my views. If they should be looked upon as erroneous; they will tend to confirm his; and, if they should be considered as probably carrying much truth in them, the truth is—as Dr. Murray will be well aware—its own reward, both as regards the person who proposes it, and all who adopt it.

I am strongly impressed with the conviction, that this *accident*, as it is called, arose from the existence of circumstances such as the following:—1. That the safety-valve was then so weighted as to communicate a pressure above that which the boiler had strength to bear; 2, that the steam was up at a very high pressure; and, 3, that the valve of the feed pipe was so circumstanced that it could not open. As for all the engineer says, it must be accepted with very great caution, for we know he is now virtually on his trial at the bar of public opinion; and even we shall be all aware, that the owners of the factory will feel desirous that the most favourable construction possible shall be put on the whole of this lamentable affair; for, should it prove eventually that they employed a careless or reckless engineer, they will be very sensible they cannot be exonerated from blame—perhaps, serious blame. I recollect a catastrophe which took place in Manchester two or three years back, very similar in most of its leading circumstances—the steam had been got up, preparatory to commencing work in the morning; the little boiler was blown up with tremendous force, thrown some distance from its seat, and several men killed; and a large portion of the works blown down, wounded, or completely shattered. I recollect, too, the wonderful tales we were told, as to the causes of the "accident," the assurances that were given that everything was all right, and that the awful event could not possibly be accounted for, save over-stress on the boiler, &c.—neither can I forget that, being there in a quarter to acquire accurate information, I heard it whispered, after the coroner's inquest had sat, the engineer was a kind of simpleton, and that a man of experience had a little before stated, he could not take charge of that boiler, and make her produce the steam that was required of her, because, as he said, he valued his life. I state these facts for the information of the public, and not to attach extreme blame to the occupiers of the works at Bradford, for I am quite uninformed as to the supervision or care they personally bestowed upon the engine, the general orders under which the engineer was reported to work it, or even as to the competency of the gentlemen, whoever they may be, to direct this important part of their establishment; neither do I know whether the engineman was, as he ought to be, present—and, if present, that he knew what he was about, and the risk he ran; or whether merely, like every careless pretender, or self-confident booby, only thought he did.

Independent of the tremendous explosive and rending power of pent up steam, I have the opinion I have arrived at, as to the causes of this murderous event, on these observations:—1. The fire could not have been, within a short period of the catastrophe, as Mr. Hetherington information is represented, "very low," either else to "spread it out on the bars, and throw on a few coals," would be tantamount to not having the engine ready to commence work when the people came; and, from so many having lost their lives, I conclude they had already begun to arrive. For the same reason, it appears highly improbable that the water could "have got foul" (with more or less fire under it all night), so that the steam was quite down, and entirely gone. 2. It seems impossible to imagine that a quantity of air of any moment could, under any circumstances, have been in the boiler when the safety-valve was put down; for, had the engineman been in the habit of allowing this, he would soon have found that his engine would work properly till it had all passed through the steam cylinder. 3. Hydrogen could not have been present if we had been admitted, as the learned Doctor would have expected the rightful. 4. Had this melancholy event arisen from the ignition of inflammable gas, such catastrophes would be of daily occurrence; all the circumstances in which the boiler was placed being, as that supposition, quite ordinary.

Everything taken into consideration, it appears to me but too probable that the safety valve was overweighted either temporarily or accidentally, and, possibly, that the valve of the supply pipe was also tied, or otherwise fastened down, to stop the function of feeding water, till the boiler got empty, when the engine began to work. As the same time I should wish to say, it appears likely that, into particular cases, this valve might be pressed down with force by the natural action on the apparatus; thus, if the boiler had filled itself up to the proper gauge, with water at a temperature much below the boiling point, and the supply had then been cut off as usual by the raise of the feed pipe and its appendages, but on, as its temperature being duly raised by the fire, would have swelled or bulk, and thus would cause the water to rise higher around the sides of the steam flues than it was originated for, and thus would occasion in it a less substantial pressure upon the fuel, together it should be; and, if they should be considered as probably carrying much truth in them, the truth is—as Dr. Murray will be well aware—its own reward, both as regards the person who proposes it, and all who adopt it.

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much raised; as the immense number of steam globules in the water would increase its bulk—those globules also, impinging with great rapidity on the bottom of the steam boat, would have a tendency to throw it up, or raise it. These effects would be likely to influence the supply valve the same as to the case previously supposed. If this note should constitute, however slightly, to arouse the vigilance either of masters or men, and awaken them to the awful responsibilities they are under, it will be most gratifying to

April 5. MECHANIST.

IRON SHIP BUILDING.

SIR,—A correspondent in last week's *Journal*, writing under the signature of "Inquisitor," desires to know the objections which retard the application of iron to the above purpose. The writer of this may mention one which has come under his notice. It appears that the committee at Lloyd's would not license iron ships at sufficiently low premiums to encourage their manufacture—this arresting being a comparatively untried experiment in modern navigation, founded by the experience of many years. The recent loss of the *Ellen Seafield*, I think, which split transversely in two halves, and then sank—having, doubtless, been severed by the great weight of the engines, &c., emphatically shows that the committee were right, as observed by the Editor of the *Mechanics' Magazine*. If longitudinal semi cylinders or pipes (not flat beads, merely) were run and fastened along the outside or inside of the boat or vessel, the required resistance—to prevent fractures, by rolling alternately on one and two of the big rolling billows of either channel, or the Atlantic, with the heat in the centre—might be obtained. ALFRED T. J. MARTIN.

Penzance, April 9.

PREVENTION OF LOSS OF LIFE FROM THE EFFECTS OF CARBONIC ACID GAS.

SIR,—You, no doubt, have seen the account of the loss of life some time ago at Hanley and Perkins's brewery, in consequence of men going into a vat which contained carbonic acid gas. I beg to suggest, had a person, under such circumstances, a smock frock tied under his chin and over his head, whether by that means the bad air would not be excluded, and good air in sufficient quantity be enclosed, so as to enable the person to respire, and go down into the vat, which was not a great distance, without endangering his life, to afford assistance to those in it that had been overcome by the foul air. It appears that life becomes suspended immediately on breathing carbonic acid gas, but I think we are able to breathe deteriorated common air some time without producing that effect—of course, I would not be answerable for trying the above proposed experiment, without persons taking due precaution, though I think it worth trying, which might easily be done in one of the London breweries, where they have vats and gas at their commands—and, indeed, it is the duty of masters to get themselves and their workpeople as fully informed on the subject as possible, for persons are continually sacrificed to ignorance, in not knowing there is no breathing carbonic acid gas and living. It is thought that water has some power of undergoing the effects of bad air—whether by giving out gas, or absorbing it I do not know; but I have heard a person say, that he became faint from breathing bad air in a coal pit, but on applying his wet coat sleeve, which had been drenched with water, to his mouth, it had the effect of reviving him. It would be well if some of the London breweries would make experiments to be made as above proposed, and try what effect throwing a bucket of water would have on a person going into a vat with bad air—*Bridgend, April 1.* CADOGAN WILLIAMS.

GEOLOGICAL RESEARCHES—VALUABLE DISCOVERY.

SIR,—As many of the readers of your valuable publication are interested in geological researches, I have much pleasure in informing them, that a very remarkable fossiliferous quarry has lately been re-opened in the parish of *Lowesmoor*, near *Leominster*; it is presumed to be a species of the *lepis ellertii*, which is composed of silica, magnesia, oxide of iron, and carbonic acid. The stone is of a beautifully variegated green and grey tint, and highly valued for architectural purposes, for which it has been extensively employed for many years—vide De la Beche, page 19 *Transactions Geological Society*, vol. 4, 2nd.

In consequence of its durability, resistance to heat, and the facility with which it can be worked, in addition to its cheapness, it is likely to take the place of other freestones for most purposes, several architects having already patronized it.—*Leominster, April 4.* AN ADMIRER OF GEOLOGY.

THE SMOKE NUISANCE.

SIR,—Although, in common with myself, and others who have witnessed the surprising effects of the appearance of C. W. Williams, Esq., on the previous of smoke in furnaces, you have shown some degree of partiality for his invention over others, in your general remarks, I have no doubt you will, in justice, publish the following particulars of what transpired at the Birmingham monthly meeting of Commissioners under the Street Act, held on Monday last:—Mr. Turner said, he was most happy to inform them that the progress of the prevention of the smoke nuisance was going on most favourably, and he had no doubt the generality of Birmingham manufacturers were about being convinced that remedies might be applied, and that in twelve months it would be thought a disgrace to every owner of a steam engine not to have adopted a remedy. He stated, that Mr. Mosely had effectually accomplished what he thought was impossible—viz., to consume the smoke from his "woolfers," and this he had effected by Mr. Samuel Hall's patent, by the use of which, instead of volumes of black smoke, they did not even emit more than a common domestic chimney; and so convinced was he of their complete success, that it was his intention to have one erected to every chimney on his premises.—As much controversy has taken place respecting the merits of those two patents, and as here is an impartial authority, showing that Hall's invention is of utility, I shall feel obliged by your insertion of these few remarks in your valuable *Journal*. It was further observed at the meeting, as a matter of surprise, that the owners of steam engines generally had not adopted some plan for the more perfect combustion of the fuel employed, particularly as there was a saving effected of at least 30 per cent. The first lot, however, are some what mistaking decided most to draw curiosity to get rid of the nuisance, which is not only an annoyance, but an injury to the health of the inhabitants. A MANUFACTURER.

Birmingham, April 8.

PROPOSED NEW BRIDGE AT LAMBETH.

SIR,—In accordance with your request, I herewith hand you a brief outline of the plan which I submitted last year to the parties interested in the intended bridge at Lambeth, which I proposed to be denominated the Victoria Bridge.

The bridge was proposed to be constructed entirely with cast and wrought-iron, excepting the face of the abutments, &c., to the following manner:—to consist of seven arches or spans, of 100 feet each, and piers of twelve feet thick, with carefully inclined approaches at each end; the three spans or arches at each side of the centre not to be above 50 ft. 6 in. between the abutments, as that the load such as upon would be 1 ft. 6 in. lower than the centre one, the object of which was to maintain the horizontal, or otherwise expressive, appearance; of course, the road or floor of the entire bridge would be gradually inclined, making a rise and fall from the centre of about 1 ft. 6 in. by which it was intended that the centre type should have the same bearing on the centre arch of the Westminster bridge; the width of the floor including the steps, was proposed to be about sixty eight feet, supported by seven separate series of cast iron, connected at feet by straight wrought iron ties, the soffit or lowest portion of the iron and spring), connected to the arch by suitable or upright bars of wrought iron, about 12ft. 6in. apart. The series were proposed to rise about twenty feet above the floor of the bridge, with a strong horizontal bar of wrought iron of about ten feet from the floor; to which it was proposed to secure the joint for supporting the floor above the steps, these bars to rest also act as an additional tie to the arch; a similar horizontal bar was to extend in the manner at the crown of the arch, so that the arch would be connected by these horizontal from the entire length of the bridge, likewise to continue at suitable intervals 12ft. 6 in. apart, cross framing a skeleton frame, 100 feet long, twenty feet deep, and twelve feet thick, which frame it was proposed to rest on the road and water soffit, with cast iron plates of gothic style, so as to harmonize with the Houses of Parliament. The several arches or ribs were to be cast as follows:—viz.: the four inner arch ribs of the bridge to be twelve feet apart, to support the proposed steps, &c.; the next arch on each side to be ten feet apart, but same which was below the footpath; and lastly, the arches each to be twelve feet from the centre, making a carriage way of twelve feet wide on each side, as on the bridge, to give convenient road way, and thereby prevent obstructions by meeting, &c. The frame to be supported by wrought iron plates, there to be a parallel form, outside to the gas-pipes, and fixed horizontally, by proper means, as before mentioned and existing; the whole supporting the road to be constructed, as every convenience for the, of light, by hollow or open work gothic arches; the floors of the steps, &c., were proposed to be flagged, except the carriage and bridges, and inclose for the centre of the carriage way, which was proposed to be of timber, laid way of the grain, about three inches thick, properly grooved; the piers were also proposed to be of gothic form, constructed in the manner of a caisson form, to receive the cases of piles, twelve feet square, and three feet to sink the iron work under, and suitable granite, to which granite was proposed of proper watermen to be introduced, so as to form a complete whole form, with proper to the bottom, &c., the inflation of which to be filled in the floor of the bridge with hard-core stones and concrete, so that the piers would become one solid mass, united with cast iron; the basis of the piers to be constructed by strong cast iron plates, longitudinally and transversely, and with proper wrought iron ties; on this platform to be fixed proper cast iron shafts or framings, to which to fix the feet of each arch.

In case be remembered, that the proposed principles of construction were the best and strongest in most effective and economical mode, such as Dredged channels, water-way tunnels, where the construction of piers or abutments might be expensive, as would be the case in the Thames—excluding, perhaps, the evidence of an ordinary suspension bridge, but quite sufficient according the piers as stability and firmness. It is considered that 2000 tons of cast iron and 1000 tons of wrought iron would be amply sufficient to construct the proposed bridge, say 900 feet long and 68 feet wide, in a most substantial and enduring manner—and, supposing that cast iron could be contracted for fixed at the average of 12*l.* per ton, and the wrought-iron at 22*l.* per ton, this would be 67,000*l.*; and suppose the approaches to cost 10000*l.*—flooring, 10000*l.*—fitting up shops, 7000*l.*—extra work, painting, &c., 4000*l.*—contingencies, 10 per cent., say 9000*l.*—altogether, 96,000*l.*; so that it may be fairly stated that, including every probable expense that can be reasonably imagined, the cost would not exceed from 100,000*l.* to 120,000*l.* It is presumed the shops would produce sufficient to pay 5 per cent. on the outlay, independent of the toll on carriages, horses, &c., which would possibly produce sufficient to pay 9½ per cent. more—thus, and considering it is proposed to make the bridge free for foot passengers, there is every probability of an ample interest for the outlay. I will only further add, that the two arches which contain the houses or shops, when bisected by the three horizontal and the several vertical fixes, &c., may be justly considered, as I have before observed, one immense beam, 100 feet long, twenty feet deep, and twelve feet thick, resting upon the piers, *perpendicularly pressing thereon*—the houses or shops would not be an injurious load, but, on the contrary, may be an arranged and fixed as actually to contribute to its strength and stability, as must be evident to any person acquainted with the principle of beams. I ought also to observe, that the footway was intended to be covered, and might be so constructed as at pleasure to close up, to exclude wind or weather—thus producing a kind of circular promenade, for foot ways and 900 feet long. THOMAS MOTLEY.

April 13.

PATENT VESTA LAMP.

SIR,—One of your correspondents, signing himself "A Constant Reader," has done the public the favour to advise them to be very cautious how they use the Vesta lamps, unless the patentee can improve their construction; this is very much like advising them not to use the lamps at all, *for* which the patentee and the public are his debtors. He complains that in a small, close, warm room his lamp emitted an intolerable smell of turpentine, and that on his staircase it smoked and went out. It is perfectly true, Sir, that under bad management the lamp will smell and smoke, and it may set buildings on fire, as will a farthing candle, or any other artificial light, but it is also true that with less attention than is required by any other lamp, it will give a purer light, with less liability to accident or failure. Still it is essential, 1. That the lamp should be properly constructed. 2. That the parties who use it should understand to read and abide by the very plain instructions sent with each lamp. 3. That the patent camphine with which the lamp is charged should be pure and fresh. The main principles adopted in the construction of the patent Vesta lamp are:—1. Cutting off the heat by non conductors, whereby safety is insured. 2. Breaking up the currents of air, and directing them in thin and successive layers against the flame, effecting perfect combustion, without smell or smoke. The patentee having provided good lamps, the consumers must also provide themselves with pure and fresh patent camphine. They must always bear in mind that the camphine is a very delicate liquor which absorbs oxygen very rapidly from the atmosphere, becoming rancid, and only very imperfectly combustible, acquiring an acrid smell distinguishing it from good, as certainly as stale fish from fresh. Another test of the camphine is, that when good, if the wick be cut obliquely, it will, in a very short time, burn itself even; while, if the camphine is bad, if the wick be cut perfectly even, it will soon burn itself quite uneven. On account of the strong affinity of camphine for oxygen, it is necessary that it should be kept in small bottles, closely stopped; that all residuum of liquor should be burned out of the lamp once or twice a week, and that the lamp should be burned out dry before it is put by, even a couple of days. Your correspondent's lamp first smelled, then, in a few days, smoked and went out. His account is a clear history of the deterioration of the camphine by progressive absorption of oxygen. Fresh camphine and a fresh wick, a good chimney and a good lamp, and he will join in the universal verdict in its favour. Within three months, 15,000 lamps have been sold, and even the lengthening days fail to abate the demand. I know of no parallel to this success, and of no more agreeable addition to domestic comfort, than that of this pure and brilliant light, *lent* by a liquor as delicate and clear as liquid silver. Professor Booth states, in an analysis, that he has made of W. O. English's patent camphine, that it is 90 parts in 100 more pure than common rectified oil of turpentine; that the common oil holds in solution foreign substances, which interfere with its combustibility, and cause it to exhale a peculiar odour. English's patent camphine, he adds, burns without smoke or odour, which extreme brilliancy, and that he considers it a superior and unexceptionable article for the production of light, when used in properly constructed lamps. I thank you, Sir, for this opportunity of explaining the difficulties your correspondent complains of, and am, Yours very respectfully,

Birmingham, April 9. T. CLAUTON SALT.

THE CAMPHINE LAMP.

SIR,—Not only do I avail myself of your offer to insert in your Journal an answer to "A Constant Reader's" letter, in your last Number, respecting the Camphine lamp, but also that he and the public should derive all the benefit from the lamp, which, apparently through ignorance, he is depriving himself of, as well as endeavouring to deprive the public.

Mr. W. Young's Vesta lamp I have burned for five months, and once was I annoyed with the blacks or soot caused by its smoking—not only was all the furniture covered with blacks, but, much more to my annoyance, the ladies in the drawing room; this caused me to make a complaint to the patentee, Mr. Young, who at once told me the cause, and how, for the future, to avoid any recurrence of the annoyance—since which, I have enjoyed the brilliancy, cleanliness, and economy of this beautiful invention. The oil lamp smokes when turned up too high, or from want of oil—and, if allowed to go on, the brass will smell of the oil, not only for hours, but days; the Camphine or Vesta lamp smokes only from the first reason, caused by the cotton not being properly cut, or the chimney not being placed upright—but will burn itself out without leaving the least smell. Before lighting the lamp, great care should be taken to cut the cotton even—and, if on lighting (which should be done almost instantaneously the wick up at all), the ring of light is not equal all round, the cotton should be cut in those parts which produce the most light, until the ring of light is made even; care should be also taken that the chimney is placed upright—for the lamp may be turned up too high, and smoke, without causing any blacks, the blacks or soot being the smoke condensed, by coming into contact with the chimney—so that it is much more necessary to see the chimney is upright, than that the cotton is cut evenly. If your "Constant Reader" will but attend to the above, he will soon call the public attention to, rather than deprive it of, this clean and economical lamp—which on account can possibly injure.

It appears the lamp mentioned in your correspondent's letter was bought in Piccadilly—probably at Mr. Reeve's; if so, it may be the "Universal" lamp, and not Mr. Young's patent Vesta lamp. If this be the case, your friend will do well to warn the public of the lamp—not only because of its smoke, but having a sufficient current of air passed through the wick, as in Mr. Young's patent Vesta lamp, but because it is supposed to be liable to explode, by the heat passing to the spirit—the hindrance of which is chiefly Mr. Young's patent, he having placed a non conductor of heat (viz., a ring of wire) between the light and the reservoir which contains the spirit.

In a few months, Mr. Young will improve his lamp by an alteration which will entirely similar to smoking—at only the cost to those who burn his lamp, of 6*d.* or 1*s.* I enclose Dr. Ure's report on Mr. Young's Vesta lamp, which, if you can spare room for in your valuable *Journal*, will be of great benefit to the public.—*April 10.* R. T.

Report of Photometric Experiments upon Young's Vesta Lamp, with spirits of turpentine, to determine the cost and quality of illumination, compared with the cost of lamps and candles. By ANDREW URE, M.D., F.R.S., &c.

The Vesta lamp, burning with its ordinary allowance, without smoke, emits a light equal to one ounce twelve wax candles of three to the pound; and it consumes, in that case, rather less than one part of spirits of turpentine to ten parts, when 6*d.*—hence, the cost per hour for 6 light equal to ten wax candles is ¼*d.*; whereas, for that wax candles would be nearly 2*d.*—from Palmer's spinning jenny candles, nearly 1*d.*—from sperm oil, 3¼*d.*—from sperm oil, in Carcel's mechanical French lamp, 1¼*d.*—that The Vesta Lamp, ¼*d.*; Carcel's Lamp, 1¼*d.*; Palmer's Candles, 1*d.*; Sperm Candles, 2¼*d.*; Wax Candles, 6*d.*

But the great advantage of the Vesta lamp is its more whiteness and purity of its light, which is, therefore, capable of displaying the more delicate contrast of colours and artificial objects, flowers, paintings, &c., to their true hues, instead of the distorted hues visible to them by the light of candles and common oil lamps.

The use of the flame from which so much light is emitted in the Vesta lamp is greatly assisted also from the air not at all entering flame of spirit externally—a difference to be accounted for from the great difference in the chemical composition between spirits of turpentine and fat oils. The spirits consist entirely of carbon and hydrogen gas—the latter, by analysis, in the parts—and that proportion per cent. five parts of oxygen. Fatty and other gaseous oils consist of 78 carbon, 12 hydrogen, and 10 oxygen, in the parts, which require for consumption only 10 of oxygen, instead of the oxygen already present in the oil and fatty substance, without admission of light, 90 of carbon and 90 of hydrogen—these having only 10 parts of oxygen, to consume the 90 carbon and 90 of hydrogen. Spirits of turpentine, 100 parts, or ounces, of oxygen, to consume the 90 carbon and 90 of hydrogen—these having only 10 parts or ounces

MINING CORRESPONDENCE.

ENGLISH MINES.

WHEAL BREWER MINING COMPANY.

April 2.—Account held on the mine of profit and loss for *Jan.* and *Feb.*:—

Dr.—To labour cost for January and February	£260	4	10		
Merchants' bills for ditto	109	11	9	369	15	11
Cr.—Copper ores sold 6th February	£163	7	7		
Deduct 1-11th for lords' dues	15	11	9		
	£149	15	5		
Received of West Trethellan adventurers	10	0	0—	159	15	5
Showing a profit of 550*l.* 0s. 6*d.*; to which add balance in hand at last account, 443*l.* 0s. 4*d.*—making a total of 993*l.* 0s. 10*d.*; from which deduct 600*l.* for a dividend of 5*l.* per 1-120th share, leaves a balance in hand of 393*l.* 0s. 10*d.*					

HALLENDRAUER MINE.

April 2.—Account held on the mine of profit and loss for *Jan.* and *Feb.*:—

Balance of cash account	£438	5	6		
Tutwork for January and February	593	16	5		
Tribute for ditto	327	4	6		
Bills	749	7	5—2098	13	5
Ores sold January and February				2231	9	3
Profits on the two months, 133*l.* 13*s.*				£133	13	6

WHEAL BASSETT MINE.

April 1.—Account held on the mine of profit and loss for *Jan.* and *Feb.*:—

Dr.—Labour cost for January and February	£2204	9	11		
Merchants' bills for ditto	493	1	9—2797	11	1
Cr.—Copper ores sold January and February	£1939	13	7		
Deduct 1-11th for lords' dues	279	11	7—1614	2	0
Showing a profit of 1115*l.* 10*s.* 11*d.*; to which add balance in hand last account, 698*l.* 12*s.* 5*d.*—making a total of 1803*l.* 3*s.* 9*d.*; from which deduct 1200*l.* for a dividend of 10*l.* per 1-120th share, leaves a balance in hand of 603*l.* 3*s.* 9*d.*					

CHARLESTOWN MINES.

March 27.—Account held on the mine of profit and loss for *Jan.* and *Feb.*:—

The said March 9th and 23*d*	£1134	5	8		
Cost—two months	£1276	14	9		
Dues—ditto	143	9	9—2130	4	6
Showing a profit of 50*l.* 19*s.* 9*d.*; to which add balance in hand from last account, 3410*l.* 9*s.* 10*d.*—leaves a total balance in hand of 3641*l.* 9*s.* 6*d.*					

TRESAVEAN MINE.

March 26.—Account held on the mine of profit and loss for *Jan.* and *Feb.*:—

Cost for January and February	£1916	12	6		
Amount of copper ore	£7023	10	0		
Less dues	351	13	6		
	£6674	8	3		
Trethellan water charge	133	18	7—6667	1	10
Showing a profit of 920*l.* 9*s.* 2*d.*; to which add balance in hand end of December, 492*l.* 4*s.* 3*d.*—making a total of 1392*l.* 13*s.* 5*d.*; from which deduct 1200*l.* for a dividend of 12*l.* 10*s.* per 1-100th share, leaves a balance in hand of 192*l.* 13*s.* 5*d.*					

WHEAL PENROSE MINE.

April 9.—Account held on the mine for Dec., 1843, *Jan.* and *Feb.*, 1844:—

Amount of cost for Dec., 1843, January and February, 1844	£1405	11	6		
Estimated amount of lead ore	£1440	0	0		
Ditto ditto copper ore	110	0	0—1550	0	0
Profit on this quarter to end of February	£ 133	8	6		
Call made 9th January of 5*l.* per 1-120th share	£640	0	0		
Less on the three unappropriated shares	15	0	0—	625	0	0
Amount of materials sold 6th December last	£102	7	2		
Credited 9th January last	450	0	0—	72	7	2
	£420	15	8		
Balance back in debt to end of November	£(85)	19	3		
Amount over-credited on lead ores in November	20	17	3		
Ditto ditto on copper ditto	13	18	0—	206	9	3
Balance in hand	£324	13	6		
Profit on the quarter	£133	8	6		
November bills charged this quarter	132	19	9		
Actual profit this quarter	£266	7	3		

HOLMBUSH MINING COMPANY.

April 8.—In the 110 fathom level, west of Hitchins's shaft, the lode is sixteen inches wide, and worth 30*l.* per fathom. The level west of Goldsworthy's winze is communicated with the north level, and the north and south lode again united; at the point of boring the lode is twenty inches wide, and worth 34*l.* per fathom; this level, east of Michell's winze, is at present suspended, and the men are now employed stoping a piece of ground behind the end in the back of this level; in the rise in the back of this level the lode is fourteen inches wide, and worth 22*l.* per fathom. In the 100 fathom level, west of Hitchins's shaft, the lode has been cut, about ten inches wide, composed of manodie, spar, and copel; east of Michell's winze the lode is ten inches wide, and worth 12*l.* per fathom; west of ditto the lode is fourteen inches wide, and worth 14*l.* per fathom; east of Wall's shaft there is no important alteration; in the cross-cut towards the Flaybjork lode we have just opened in the north wall of the lode about one foot, and hope to cut through it by next week—the part opened is composed of copel, spar, and manodie; in the eastern stopes in the back of this level the lode is one foot wide, and worth 13*l.* per fathom. In the stopes east of Hooper's rise the lode is eighteen inches wide, worth 20*l.* per fathom; west of ditto the lode is fifteen inches wide, and worth 22*l.* per fathom. In the stopes in the back of the ninety fathom level the lode is one foot wide, worth 14*l.* per fathom. In the eighty fathom level, driving east of the south cross-cut, the lode is six inches wide, composed of copel, spar, and manodie, with stones of ore. The pitches are turning out well. T. RICHARDS.

UNITED HILLS MINING COMPANY.

April 9.—In Williams's shaft there is no alteration. In the seventy fathom level, in the eastern end, the lode is three and a half feet wide, eighteen inches good ore; in the western end the lode is four and a half feet wide, producing a small quantity of good ore. In the sixty fathom level, east of eastern shaft, the lode is four feet wide, eighteen inches on the middle part producing ore of fair quality—improved since last reported. West of James's shaft the lode is two and a half feet wide, very throughout, of a low quality. In the eastern shaft the lode is four feet wide, two feet good ore; very little has been done in this shaft for the past week, in consequence of an increase in the water; we are now putting down a small lift of pumps, which, when completed, we expect to keep the water much easier than with barrels. In the diagonal shaft there has been no lode broken for the past week. In driving the fifty fathom level end east the lode is three feet wide, producing some ore, with a kindly appearance. In the thirty fathom level the lode is eighteen inches wide, one foot on the north part ore of average quality. In the ten fathom level the lode is four feet wide, producing but little ore. In Wheal Spurrow, in Gibbons's shaft, we are still engaged fixing the new pumping lift and rods in this shaft, which we hope to be completed by Friday next, when we shall again resume sinking under the forty fathom level. In the forty fathom level the ground in the cross-cut is rather harder for driving than when last reported. In the thirty fathom level there is very little alteration in the lode; an increase of water will cause us to abandon them for some time. In the winze in the twenty five fathom level the lode is eighteen inches wide, producing but little ore. At the twenty fathom level, driving east, the lode is eighteen inches wide, nine inches ore of average quality; in the western end the lode is eighteen inches wide, good ore. In the ten fathom level, in the eastern end, the lode is fifteen inches wide, two inches good ore; in the western end the lode is one foot wide, six inches ore of good quality.

N. LANYON. T. TREVARREN.

COOK'S KITCHEN MINE.

April 6.—North Tincroft lode, in the fifty fathom level east, is two and a half feet wide, producing about 5*l.* worth of ore per fathom; the bottom of the end, however, is much better than the back. The eastern shaft is now down seven and a half fathoms, and the ground is favourable. The western pitch, in the back of the fifty, is still looking very well, the lode being seven feet wide; the eastern pitch is rather improved. Easby's lode, in the new east shaft, in which the men are last week; we are driving east on this lode, at the seventy two fathom level, and have had some good stones of ore, but the end is at present in a cross course. In the cross cut south, at the 111, we have cut a promising looking lode, about two feet wide, with some ore in it, but we cannot open on it until we have communicated to Brambling's bottom, on account of the ventilation. In the other cross-cuts there is no alteration. On Trestrle's lode the end, at the 100 fathom level west, is in the cross course, and we have about nine feet more to drive to meet with it, according to the leave in the levels above. In the winze, under the 100 fathom level, we are now down seven and a half fathoms, and have yet no water; the lode is four feet wide, worth 12*l.* per fathom. There is no alteration to the lode at the 100 fathom level, east of east cross shaft, or at the thirty-six fathom level, west of Allen's shaft. The pitches are looking much as they have been. Our next sampling will not be less than 200 tons. A. BUNDY.

TRELEIGH CONSOLS MINING COMPANY.

April 1.—At the eighty, east of Christow, the lode in this end is about twenty inches wide, and worth from 10*l.* to 15*l.* per fathom. The stope west of Gardner's, in virgin eighteen inches wide—cutter disordered by a slide; the stope, east of Great Fortune, we hope to see the lode soon; it is further off than we calculated on. The fifty west is large and copelly, and worth 5*l.* per fathom; ditto east is worth 8*l.* per fathom. At the forty-four west the lode is three and a half feet wide, and worth 18*l.* per fathom. W. TREWREN.

WEST WHEAL JEWEL MINING ASSOCIATION.

April 8.—The ground in the 100 cross-cut, and likewise in the eighty five cross cut, continues without alteration. The eighty-five west, on Wheal Jewel lode, is two feet wide, and worth about 6*l.* per fathom; the rise in the eighty five east is worth 20*l.* per fathom, and the winze sinking over the same is worth 20*l.* per fathom. The seventy west is worth 3*l.* per fathom; the winze sinking under this level is worth 12*l.* per fathom. The twenty east is worth 6*l.* per fathom. At Williams's engine-shaft the lode is two feet wide—very promising for ore; the adit level west, on this lode, is three feet wide, composed of gossen and black ore. S. LEAN.

CONSOLIDATED TRETOIL MINING COMPANY.

April 9.—The lode in the fifty fathom level, west of Henwood's shaft, is one foot wide—tribute ground; the lode in ditto, east of Henwood's shaft, is six inches wide—producing a little ore. The lode in the forty fathom level, east of Henwood's shaft, is one foot wide—good tribute ground. The lode in Williams's shaft, sinking under the forty fathom level, is one foot wide—very good tribute ground. The new engine-shaft is down 28 fms. 3 ft. below the adit. H. WILLIAMS. J. MORCOM.

NORTH HOLMBUSH MINING COMPANY.

April 8.—The engine-shaft is sunk below the adit level 6 fms. 3 ft. 6 in., and the ground continues favourable for sinking. In the adit level, west of the cross-cut, the lode is two and a half feet wide, composed chiefly of manodie, with spar and copel, and has a promising appearance. T. RICHARDS.

BEDFORD UNITED MINING COMPANY.

April 9.—At Wheal Marquis, the ground in the engine-shaft is favourable for sinking. The cross-cut east at the forty-seven fathom level is progressing satisfactorily; the lode in the forty-seven fathom level west is twenty inches wide, worth about 8*l.* per fathom. The lode in the thirty-five fathom level west is two feet wide, and worth 20*l.* per fathom; in this level east no lode has been taken down since my last; the lode in the sump winze sinking below this level is three feet wide, and worth 8*l.* per fathom, and very kindly. The pitches remain without alteration. At Ding Dong, the lode in the engine-shaft is about two feet wide, composed of spar, manodie, and ore—a very promising lode. J. PHILLIPS.

CALLINGTON MINING COMPANY.

April 8.—I beg to inform you that the shaftmen at the north mine are engaged in fixing bearers and cisterns at the seventy fathom level for a plunger lift. In the sixty fathom level driving south we have a strong lode, producing silver-lead ores. In the fifty fathom level south the lode is very kindly, producing silver-lead ores. In the forty fathom level south the lode is very kindly, producing silver-lead ores; in this level south the lode has been intersected by a cross-course. Johnson's engine-shaft is sunk five fathoms below the eighty fathom level; at this level, both north and south, we are opening tribute ground; the rise in the back of this level, I expect, will be lotted this week. In the seventy fathom level north we have a very good lode. In the sixty fathom level north the lode has not been taken down since last report; the winze sinking in the bottom of this level is opening good tribute ground, and we expect it will be communicated with the seventy by the end of this week. Our tribute pitches look well. J. T. PHILLIPS.

CORNUBIAN MINING COMPANY.

April 8.—Chiverton lode, going west of Murray's engine-shaft, at the seventy-eight fathom level, is eighteen inches wide, composed of elvin, manodie, and soft spar—a kindly appearance; the lode going east at that level is one foot wide, and saving work. The seventy fathom level, driving west on Chiverton lode, is two feet wide, and very promising; at that level to the east of Murray's engine-shaft, driving north, we have not yet intersected the north lode. Chiverton lode, going east of great engine-shaft (seventy fathom level) is two feet big, of a promising character. At the sixteen fathom level, driving north east of Clifford's, the lode there is divided into rich branches of lead, and in soft compound ground, which, when opened, will be worked away on tribute. The ground in the cross cut, going south at that level (sixteen), is improved lately, being now on easy killas. At Vanhongtongs the lode in the adit end, going west, is two feet wide, of gossan, elvin, manodie, and frequently a little lead, which is as much as we can expect to find, being so very shallow; the lode going east is not quite so large on an average; we still think, however, that this part will prove a valuable discovery; the cross-cut driving south here is passing through a good channel of ground, and in each of these levels we have as many hands as can be employed, and the men relieve to place night and day. We have also set six men to sink a shaft about twenty feet to the south of the lode, for the purpose, if practicable, to see the lode a few fathoms below the adit; we have hopes this can be effected by manual labour, and which will throw much light on that part of the mine, previous to machinery being erected; we have extended east and west on the lode in the past month, thirty-two fathoms. The public setting for this month was held on Saturday last, the 6th inst., the particulars you have handed in the usual way. R. ROWE.

FOREIGN MINES.

UNITED MEXICAN MINING ASSOCIATION.

Guanaxuato, Feb. 23.—I beg leave to refer to the inclosed duplicate of my last letter to the court, dated the 26th ult.

Mine of Rayas.—The association having been put in possession of this mine, in virtue of the recent contracts of Avio, the first steps taken have been to make a careful and minute inspection of all the workings underground, productive or otherwise, and to adopt a system of operations conducive to order, regularity, and permanent returns, not only proportionate to the actual very much exhausted state of the principal productive sources, but with the view also, to the future discovery of new points by workings of research and speculation.

Rayas New Contract.—I have now to inclose the copies of the two further contracts of Avio, between the association and Senors Robles and Urrutia, respectively for five and one sixth and one and one-sixth bars, and dated the 19th and 22d of last month, and as they will be found equal in every material point with the contract with Senors Alaman and Tellez, require no explanation here.

Quicksilver.—The invoice of the sixty flasks shipped by the steamer *Trent*, is to hand, and its amount passed to the debit of the corresponding account in gold, 18*s.* 10*d.* I perceive that other sixty flasks had been purchased for shipment by the *Trent*—the steamer with the January mails.

Establishments.—The next students for Tampico will leave hence in about two months, and it is purposed to forward by it such funds as can be spared from the ways and means of the management as usual.

J. N. SHOOLBRED.

Report on the State of the Workings of the Mine of Rayas.

Feb. 22.—Purissima.—In the ends commenced on each side of the *vein* of Apostoles scarcely any ore has been found. A narrow thread of rich ore again presented itself in the pit of Santa Elena, but was of short duration; and the operations in this point are now confined to driving an end under the pit of Apostoles, to see if the good ore continues on the inclination of the lode; in the breast while the rest of the workmen are being employed on pillars, from which a small produce is obtained. Ten pair of barreros have been employed by day and eight pair by night, and the weekly produce has averaged twenty four cargas of ore.

San Cayetano.—In the end of Pachilla some good ore has been met with in the *vein*, which is, consequently, being followed up with as many men as can work advantageously. The end of Nuebe Barras and *vein* of Santiago are advancing in rather ordinary ores. The end in the lower part (San Salvador) contains some small beauties of a better quality of ore than that hitherto extracted. In the pit of San Pablo, in San Cayetano, the *vein* has been secured with a dry wall, and the ores extracted from the pillars between this pit and San Francisco are of excellent quality. The usual extraction has been obtained from the pillar of Los Reyes, but this is about to terminate. The pit of San Antonio, the end of Guadalupe, the pit of San Pedro, and *vein* of San Francisco have been suspended, the produce being very scarce, of the usual ordinary character, and, from their several positions in the lode, offering no encouraging prospects of material improvement. Thirty-two pair of barreros are employed by day, and twenty-six pair by night, and the weekly produce does not average one cargas.

San Miguel.—On the south cross cut side of the pit of Santiago some rich threads of ore have been laid open; in the advance part of the pit, and on the north-west side, the narrow threads vary their position continually, without differing much in the quality of the produce. The rein to the north-west offer nothing worthy of particular notice. Seventeen pair of barreros have been employed by day, and ten pair by night, and the weekly produce of ore has averaged scarcely five cargas.—Besides the above-mentioned quantities of ore, there has been a weekly average of eleven cargas—the sweepings of the paths of Santa Rosa—making a total weekly average of 512 cargas. In the various points worked by barreros in joint account with the mine, there is not, at the present moment, any point that is giving ores of superior quality, the general produce of these workings being of the common classes.

Statement of Produce of Picked Ore, Cuttings, &c., of the Mine of Rayas, for the four weeks ending Jan. 27, and Feb. 3, 10, and 17.

MONTHLY RETURN OF ORES SOLD.

Date.	Ores picked, Northumbria and Rayas. No. bags.	Cts.	qr.	lbs.	Central Co. No. bags.	Cts.	qr.	lbs.	Net sale of Assayers' returns.	Amount of Assayers' returns.	Excess of Assayers'.*
Jan. 27	114	4	2	...	120	0	0	...	6740	£ s. 6	£ s. 1405 0 s
Feb. 3	148	5	18	...	147	0	0	...	11000	1 6	2295 0 0
„ 10	173	6	0	...	173	0	0	...	12000	1 6	2502 0 0
„ 17	114	4	0	...	112	0	0	...	7800	1 6	1627 0 0
Total	549	19	18	...	552	0	0	...	37540	5 6	£7829 0 0

* Excess of assayers' over half sale of Inconcon ores, and paid by the owners and Central Company.

† In this half sale are included £40 for ore sold on account of the mine.

Distribution of Ayorse of Cutting, or Manantiales—viz.:

To the Northumbria, for	135 bars.	£2502	1 6
„ Central Company, in representation of	42 „	778	1 6
Total	177 bars.	£3280	3 0

Outlaying of Ores.—To the Northumbria, hacienda of Inconcon, 1848 cts. 3qr. 11 lbs.; to Central Co., hacienda of Santana, 1700 cts. 1 qr. 2 lbs.—Total, 3548 cts. 0 qr. 13 lbs.

Guanaxuato, Feb. 20. G. B. GIBBONS.

ANGLO-MEXICAN MINING COMPANY.

Guanaxuato, Feb. 23.—I now beg to inclose the half-year's accounts down to 31st December. The result of the mine of Asuncion, in respect of produce, during this period, has not been equal to the anticipations formed by me at the end of the previous half year, but the mine has, nevertheless, made that important step so much to be desired and attained, a state of profit that has every appearance of permanency; the extraction of the first six weeks of the half year averaged but forty-three cargas weekly; that of the next six weeks was 254 cargas; and the average of the subsequent period of fourteen weeks amounted to 400 cargas. In the earlier portion of this time there was naturally a considerable loss, because a heavy outlay ran on all the while that there was but a very diminutive return to reduce it, but, after that, the mine gave enough to pay all its expenses of current working, and of searching for other points to keep up a permanent supply of ore. The extraction of ore above quoted does not include the class called "tierras," which, from the little profit they leave to the mine, owing to the lowness of their ley, 5½ to 6½ ozs., were not mentioned in the weekly returns. The profit these give is chiefly to the haciendas, in the shape of mequila; the quantities of these "tierras" produced in the six months amounts to 1266 cargas. The total outlay in the half-year was £36,851, and the total calculated returns £22,273—leaving a deficiency of £14,578. The undertaking in the mine of Sirena has, I regret to say, as yet produced nothing consolatory; the expenditure upon it amounts, for the half-year, to £1606, and the work only ones in the course of this time exhibited the existence of silver, which did not exceed, however, 1½ ozs. per montoon. The haciendas of Escalera and San Matias have been kept in full employment on Asuncion and Rayas ores; the profit on the former hacienda for the half-year is £2306, and on the latter £2612. On the quicksilver consumed in these establishments the profit has been £2011—making, altogether, a sum of £13,239 in this department. The general summary of results shows a much smaller loss than in the preceding half-year, amounting to £10,000; and I confidently believe, that the time has at last arrived when it will be my good fortune to exhibit a more agreeable picture, because the progress of Asuncion from the end of the year to the present date confirms the opinion I had before expressed, that the Sertenejo workings would afford the means of obtaining a profitable supply of ore for the future. If from the above deficiency the amount be deducted that has been received from the mine of La Luz in the past half year, £7500, and to the remount be added the remittance made for the London establishment of £4500, there will be a final result of £7000 as the amount by which I have weakened my financial position, as compared with the preceding half year—a diminution which has to be put in competition with the improvement which has taken place in the same period in the company's concerns generally.

Feb. 23.—In the past month the mine of Asuncion improved, as compared with the month before—the average of its extraction amounting to 500 cargas weekly, with a larger proportion of the best class of ore, and this of a better ley; the tierras produced in the four works amount to about 800 cargas—making the total produce 500 weekly. The principal plan, San Pablo, looks well, and continues to produce some very fine ore. The bottom has at last been reached of Buen Suceso, ore having commenced breaking the day before yesterday; as yet, appearances are not exhilirating, nothing having been met with but ore of an ordinary class. This, however, is no reason for being discouraged, because it is a common circumstance for the silver to disappear from the ore in workings that have been long under water, and it is very likely that, at a few varas depth, the ore may be found of good quality. The rails in the level of San Gregorio will now be laid down with all expedition to carry on as soon as practicable the work of investigation westward, and find a point further in, that could be cleared easily to create a circulation of air for this new plan. The three haciendas continue in full employment on Asuncion and Rayas ores—sixty-one arrastres on the former, and thirty on the latter. The Sertenejo workings are supplying fifty of the above arrastres, and Buen Suceso will probably give more than enough for the remaining eleven, but even, if this were not the case, there is a stock of ore on hand of 3000 cargas at the mine and haciendas that will fill up a large gap. The mine of La Luz has further paid, since my last, the sum of £3510 towards the liquidation of the company's debt, and continues in splendid houzeaux.

BOLANOS MINING COMPANY.

San Clemente, Feb. 16.—San Nicolas.—The bunch of rich ores which has been yielding so much continues now in the bottom of La Luz level, and is increasing still in richness as it descends; our twelve pairs of men are working upon it, and broke last week 1600 bags of ore, which, when cleaned, will, no doubt, give more than 300 cargas. In the end between San Francisco and La Luz the ore continues, but not so rich; some remains also in the east of the winze, which connects the two levels, and in the rise of San Francisco there is still ore to be broken. A discovery has been made by the tributers (men working on partido) in the level of San Francisco, a little west of the boundary line of San Clemente. In breaking the ore in the roof a vein was some time since found to be running off to the north as it rose; it was at first supposed to be only a branch of the Buen Suceso vein, divided by a horse, but, after several weeks' work, we have no sign of its joining, and it appears so formal in itself, that I am inclined rather to consider it a branch like the one called San Juan, which connected Buen Suceso and San Clemente, and produced so abundantly; this also has been very productive of rich ore, but not sufficiently so to induce me to take it from the hacienda. It is possible this vein or lode may continue to the surface, which may give a new existence to San Nicolas, even when its present workings pass into Malacacho. The north cross-cut from La Luz has apparently cut through the Buen Suceso vein in "horra;" we shall, however, drive a few varas further to leave no doubt behind. The east end of San Armadio and the west of San Nicolas have been communicated this week; we shall now set one of the bargains to the east end of San Nicolas, to meet the west end of Dios nos Guie, which will then form one level; no discovery has been made in the progress of this work. A cross cut from San Nicolas shaft, south of the level of San Francisco, has been commenced this week, with a view to explore all that ground hitherto untried. On the surface numberless veins are visible, some of which must be cut by this work, and on the plan you will see a lode cut by the long cross-cut south of San Expectidora, and that of San Eduardo, which crosses that level in south cross-cut of San Expectidora, both of which must be met with below. The ores in the level of San Mariano still continue. The other tributers in San Nicolas are quite unproductive and unpromising.

San Clemente.—We have occasionally had specimens of good ore from the east end of San Fernando, La Luz, and Dios nos Guie; this last especially has been constant for the last two weeks in ore of 6 ozs. per montoon; the end appears to be in whole ground, though it is still possible we may come upon the other workings of El Carmen. In the east end of San Fermin, where the vein of San Clemente was dishearted by a cross vein and lost, I have driven a cross-cut to the south, as well to seek it as to try the San José lode in that place. The San Clemente lode has not been met, and that of San José has been cut in "horra." We have, however, still to drive a little further for the chance of finding another branch of San José, but the south is expended for the present, to follow the cross vein, which has been cut through with some appearances of ore; the rules of distribution should also bring us upon San Clemente by following this course, and no effort should be omitted to seek it here, as on this level the finest tenements were formerly found. The Boundary mines of San Germain is suspended, on account of the expense of draining it by hand, the water being very troublesome there.

Hacienda.—The ley of the tortas in La Granja hacienda since my last has been—of San Nicolas ore, 16, 60, 10 ozs.; and of San Clemente, one torta, 14 ozs. I have every prospect of these leys being maintained, and probably increased; the cold and wet weather has been very prejudicial to our reduction; we have not been able to work three last three weeks, and have now £100,000 in ores in the haciendas unavailable, and have been obliged to stop the grinding in consequence. The two first tortas we wanted but four 50 per cent. of their assay (though part of this loss has been recovered in the refine). I believe a remedy has been found for this evil in the addition of crushed marmajon, so that the tortas now promise to give us their ley as usual, but their reduction has been thrown back by the operation.

Malacacho.—The east end of San Fernando, on Buen Suceso lode, continues to metallic matter, and small veins from it occasionally assay 14 ounces per montoon, so that there is every encouragement to proceed with this work. The west end of San Almadio has crossed the boundary line, and is now in Malacacho; thirty or forty varas more driving must bring the ends of San Francisco, La Luz, and San Fernando into the same ground.

San Rafael.—We sunk the winze at Buen Suceso till we came to the water, and then cross-cutted it, in order to open the ends east and west at the level of San Bonifacio, in Velados shaft, when we immediately broke into small veins of rich ore in both ends, which have continued ever since. The quantity of ore produced is very striking, but there is every reason to hope for abundant success in this undertaking; I went only to see the lode of Vera Bella cut in the cross cut of San Bonifacio, to determine where to sink a shaft for working it. In the east end of San Buenaventura we are now at the point where we ought to cut the lode of San Francisco de Paula—and a short time will determine whether this work is worth following or not.

Vera Bella.—Nothing favourable has been met with in the mines of La Luz; the cross-cut of La Luz from Velados shaft is not yet through—the general has imposed on hand that the tributeers demanded £100 per vara, and we have preferred working it by day-work. We may expect every week to cut the lode at San Bonifacio level; as soon as this is done, I shall commence a new cross-cut south from the shaft, which will be eleven fifty yards lower than San Bonifacio, and give another trial to the Reyna lode at a lower level than it has yet been seen—and continue again to Vera Bella, if appearances there should warrant it.

Pure Rose.—The sinking of the cross cut has been very good, but no discovery has yet been made.

San Clemente, Feb. 17.—Pure Rose.—We have lost sight of a small branch of a lode, producing a basket to the ore we took, and the stones broken from it are full of ruby silver—and the pyrites and blende or galena in the vein

being 60 ounces per month; we may, consequently, expect monumentally to cut the hole, and have every encouragement to hope it will be in ore.

Statement showing the Result of the Mines and Haciendas of the Bolanos Company, in Sombrero for January.

	Loss.	Profit.
San Cayetano Mine	$1710 5 3	—
San Nicolas	—	$1195 7 3
Mainzerote	833 5 3	—
Vera Bella	2047 6 4	—
San Rafael	1129 3 4	—
Loreto	69 6 4	—
Santa Barbara	74 6 0	—
Puro Lino	240 1 7	—
La Granja and Regina Hacienda	—	6 5 2
Loss on district		6696 5 4
	$10,000 0 0	$10,000 0 0

REAL DEL MONTE MINING COMPANY.

Mineral del Monte, Feb. 28.—Your dispatches of the 1st of January, per *Trent* steamer, have come duly to hand. By the details of mining operations given to Mr. Richard Rule's report to the manager, it will be seen that our prospects, upon the whole, have, within the last month, somewhat deteriorated. In San Francisco the works have been pushed forward with all possible vigour, and the sinking of the shaft below adit, which was resumed sixteen days ago, has gone on very well, and the fifty vara level cross-cut has since been discovered, and found comparatively close for thirteen varas from the shaft. The total already cleared and secured from El Arte whence is twenty-one varas, leaving about 110 more to reach San Francisco shaft; but, from the latter, we may expect to get on faster, and perhaps there may in some part of the distance clear. The water in the shaft, I am glad to say, is very little, and with half a malacate is easily kept down. The works commenced about two months since, with the object of exploring the vein above Esperanza level, between San Bernardo mine and Guadalupe shaft, have not produced so much ore as was expected. The rise above the Esperanza is still in a hole nearly three varas wide of sangue, containing per assay from 10 to 15 mrs. per montón. The Santa Rosa level is in a promising vein, but poor; we purpose, nevertheless, to continue driving to communicate with the rise.

San Juan level is poor, and the driving for the present suspended. The mines below this level and above Santa Rosa will be communicated in about eight or ten days more, after which we shall stope the ends, where there is some ore left standing. At Terrero the raising of ore has, of late, diminished; the labores in the vicinity of San Clemente mines, above El Rosario level, are nearly finished, and our principal dependence, therefore, is on the San Alfonso workings, where there is still a pretty deal of ore of both classes to be broken, but the frequent hindrances caused by the rising of the water make the returns from this place uncertain; as soon, however, as the communication to the Arzobispo adit is completed, we shall proceed to make the alterations in Terrero pumwork, described in my letter of the 19th December, after which there will be less difficulty in keeping the water in bulk to Taylor's level. The driving of the latter east has been suspended, for the purpose of rising in the back, to communicate the San Alfonso bottoms; there appears, however, to be a large part of the vein remaining on the south side of the level, and which is, probably, the best, but we forbear examining it at present, fearing to cut down the water from Rosario; this, however, will be done as soon as the proposed alterations in the pitwork is made.

At Dolores we are going on just as usual, and the raising of ores for last month amounted to thirty-six cargoes of smelting, and 146 of sangue, of tolerably good lay. The sinking of the new winze below Santiago level has been suspended, on account of the water, and during the last two weeks we have been singing the bottoms of the level east of the winze, and we can now see for a length of seven or eight varas that the hole is very, and will afford a profitable working; we consider it deserving a deeper trial, and have, therefore, resolved to sink the diagonal shaft for another level, and, as the winze is only about thirty varas from the shaft, it is probable the water will disappear from it as the latter deepens, in which case the sinking in both places will be carried on at the same time. Looking at the different points of the negotiation, where works of trial have been from time to time commenced, and afterwards abandoned, owing either to the unfavourable appearance of the vein, or to reduce the expenditure, none appear to me deserving more particular attention than the Santa Brigida vein, south of Dolores, particularly when we consider, that on the northern side of the Dolores, between it and Acoxta, the vein united to the first Conde de Regla in the working above the level of the adit, a great treasure, and some millions of dollars profit; on the south side this vein is nearly virgin, and at the different points it can be seen underground; it has a promising appearance, particularly at the old adit level, where we have lately resumed the driving. If we should happen to meet with ore in this level, we may expect a great abundance for an indefinite period, and it may be extended at a very moderate expense. At Sacramento the quantity of ore raised in January was small, particularly of the best class, amounting to only fifty cargoes smelting, and 1600 of sangue; in this month nine more weeks it has amounted to 403 cargoles of the former, and 1400 of the latter. The most productive point has again been the forty vara level north, which has passed through a bunch of sangue ore, intermixed with a little of the best class. The La Luz workings, on the Santa Brigida vein, have lately been supplying the principal quantity of smelting ore for the furnaces, but the ley is rather low, not exceeding from 6 to 8 mrs. per cargo. The produce from this mine in January was 117 cargoles of smelting, and 1200 sangue; and in the four weeks of the present months it has yielded the cargoles of the former, and 1400 of the latter. The increase has been from the end and back of the San Patricio, or sixty-six vara level, during month; for the month of March we shall also have a good produce from this place, but beyond this time we cannot speculate what it may be with any degree of certainty, as the hole is soft, and gravity worked out, but, as it is hoped, we may expect to find others as the level progresses. The water is still about eight varas below the San Patricio. Accounts continue very poor, the whole produce for January amounting only to 110 cargoes of sangue, and forty-one of smelting ore; the rise above the 1st vara level, against the old shaft, produces a little sangue ore, but the vein is so hard and close that it has not yet cut down the water from the part worst under the eighty one vara level.—In the Guadalupe winze, the water has, of late, been lowering very slowly, and it is still about eight varas above the bottom, but there is a little doubt that a portion of it is being lost down from that part of the adit east of Acoxta, which has never yet been examined, but which is now being done as fast as possible. The cross-cut from San Pedro shaft, at the level of the Arzobispo adit, has been eleven eight varas and a half, and the last vara has been passing through something like vein stone, but very hard, and without a grain of ore; no water is still running out of the rock, it seems as to begin there is more vein still further south, and we have accordingly ordered the cross-cut to be a week or two longer.

The produce from Santa Rosa for the last four weeks amounted to 330 cargoes, but the greater of the ores from the mines having lately shown a diminished ley, the smaller bags of each have been abandoned. The sinking of the Vicente shaft has been resumed, and produces some good ore, and the water, although not much, is beginning to be a little troublesome.

P.S.—Just as I was about to close this letter and make up the packet dispatches, Captain Rundell came into the room with some fine stones of ore discovered last night in the Arzobispo cross cut, north of San Pedro shaft; we cannot say much about it yet, but it is a promising encouragement, as it shows the vein is not without ore at this north. Under the Directory, 3 oz. 10 dwts. 14 grs.; returns, 3 oz. 11 dwts.—loss, 0 oz. 1 dwt. 12 grs.

WORK PERFORMED BY CORNISH ENGINES.

The number of pumping engines reported for the month of March is 41—the quantity of coals consumed being 1006 tons, rating, in the aggregate, 10,066,000 lbs. of water 10 fathoms high—the average duty of the whole is, therefore, 10,000,000 lbs. lifted 1 foot high for the consumption of a bushel of coal.—The following are those engines the work of which has exceeded the average:—

Mines.	Engines.	Description of Engine.	Load in pounds.	Length of Stroke.	Strokes per minute.	Duty.	Lbs. lifted 1 ft. high by 94 lbs. of coal.	Last return.
C. W. Fortune	Prosper 60-in.	D	27	9	10	75	65000	21 Mar.
Wh. Virgin	Taylor's 80-in.	D	40	9	10	75	90000	21 Mar.
Consolids	Bullock's 80-in.	D	40	9	10	75	90000	21 Mar.
Great Work	Lewis, 90-in.	D	45	9	10	75	101250	21 Mar.
Wh. Vor	Barton's 90-in.	D	45	9	10	75	101250	21 Mar.
W. Kitty	Pool 70-in.	D	35	9	10	75	78750	21 Mar.
E. W. Crofty	Treweek's 80-in.	D	40	9	10	75	90000	21 Mar.
Cook Bros.	70-in.	D	35	9	10	75	78750	21 Mar.
Other	Good's 60-in.	D	30	9	10	75	67500	21 Mar.
United Mines	Taylor's 90-in.	D	45	9	10	75	101250	21 Mar.
Other	Eliott's 90-in.	D	45	9	10	75	101250	21 Mar.
Other	Lewis's 70-in.	D	35	9	10	75	78750	21 Mar.
Other	Hocking's 60-in.	D	30	9	10	75	67500	21 Mar.
Penwartha Con.	Vigurs's 60-in.	D	30	9	10	75	67500	21 Mar.
East W. Rose	Michell's 70-in.	D	35	9	10	75	78750	21 Mar.
Fowey Con.	Sophia's 80-in.	D	40	9	10	75	90000	21 Mar.
Par Consols	60-in.	D	30	9	10	75	67500	21 Mar.

COAL MARKET, LONDON.

SATURDAY.—Adair's Main 18—Hetton's Wall Hartley 18—Hunter Main 17—Davison's Main 17—Hetton's Main 17—Hastings's Hartley 18—Holywell Main 18—Wilson's Wall Hartley 18—Wallsend Main 18—Hetton's Hartley 18—Hetton's Lambton 18—Hetton's Wall Hartley 18—Hetton's Main 17—Hetton's Wall Hartley 18—Hetton's Wall Hartley 18—Hetton's Wall Hartley 18